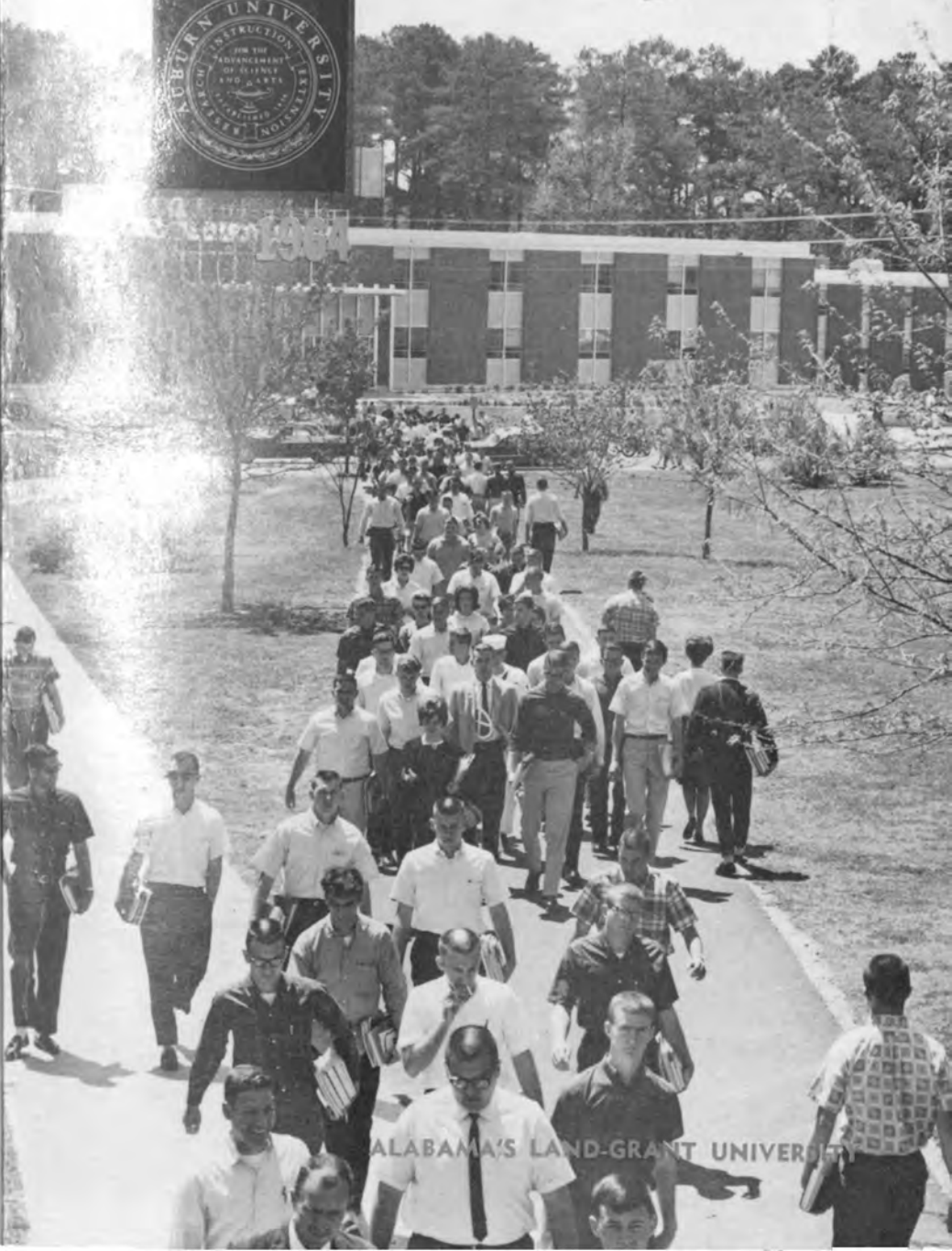




# alabama land-grant university bulletin



ALABAMA'S LAND-GRANT UNIVERSITY

# AUBURN UNIVERSITY

Auburn, Alabama



ALABAMA'S  
LAND GRANT  
UNIVERSITY

## 1964-65 CATALOG NUMBER

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## AUBURN UNIVERSITY BULLETIN

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VOLUME 59

APRIL, 1964

NUMBER 1

1964

## UNIVERSITY CALENDAR

## JULY

S	M	T	W	T	F	S
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## AUGUST

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## SEPTEMBER

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## OCTOBER

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## NOVEMBER

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## DECEMBER

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## 1964—Summer Quarter

May 21, *Thursday* Last day for filing applications  
 June 11-12, *Thursday and Friday* Registration  
 June 15, *Monday*, 7:00 a.m. Classwork begins  
 June 15-18, *Monday through Thursday* Special examinations  
 June 16, *Tuesday* Last day for term registration  
 June 16-17, *Tuesday and Wednesday* Change-in-registration period  
 June 17, *Wednesday* Last day for registering or adding courses  
 June 29 Pre-college counseling begins  
 July 17, *Friday* Final examinations first term; registration second term; reporting of mid-quarter deficiencies  
 July 20, *Monday* Classwork begins for second term  
 August 14 Pre-college counseling concludes  
 August 20, *Thursday* Last day of classes for second term students  
 \*August 20-22, *Thursday through Saturday* Final examinations for quarter  
 August 21, *Friday* Final examinations for second term  
 August 24, *Monday* Graduation exercises

## 1964—Fall Quarter

August 31, *Monday* Last day for filing applications  
 September 21-23, *Monday through Wednesday* Registration  
 September 22, *Tuesday*, 4:00 p.m. Freshmen report for orientation  
 September 24, *Thursday*, 7:00 a.m. Classwork begins  
 September 24-29, *Thursday through Tuesday* Special examinations  
 September 25-28, *Friday and Monday* Change-in-registration period  
 September 28, *Monday* Last day for new registrations  
 October 27, *Tuesday* General Faculty Meeting  
 October 29, *Thursday* Reporting of mid-quarter deficiencies  
 November 16-17, *Monday and Tuesday* Pre-registration for Winter Quarter  
 November 25-29, *Wednesday noon through Sunday* Thanksgiving recess  
 December 8, *Tuesday*, 10:00 p.m. Classwork ends  
 December 9, *Wednesday* No classes  
 \*December 10-15, *Thursday through Tuesday* (including *Saturday*, Dec. 12) Final examinations  
 December 16, *Wednesday* Graduation exercises

## 1965—Winter Quarter

December 14, *Monday* Last day for filing applications  
 January 4-5, *Monday and Tuesday* Registration  
 January 6, *Wednesday*, 7:00 a.m. Classwork begins  
 January 6-9, *Wednesday through Saturday* Special examinations

\* Approved group examinations limited to four-day period prior to this date.

# UNIVERSITY CALENDAR

1965

January 7-8, *Thursday and Friday* — Change-in-registration period  
 January 8, *Friday* — Last day for new registrations  
 January 9, *Saturday*, 7:00 a.m.-10:00 p.m. — Classes (Tuesday schedule)  
 February 9, *Tuesday* — Reporting of mid-quarter deficiencies  
 February 16-17, *Tuesday and Wednesday* — Pre-registration for Spring Quarter  
 \*March 12-16, *Friday through Tuesday* — Final examinations  
 March 17, *Wednesday* — Graduation exercises

## 1965—Spring Quarter

March 2, *Tuesday* — Last day for filing applications  
 March 23-24, *Tuesday and Wednesday* — Registration  
 March 25, *Thursday*, 7:00 a.m. — Classwork begins  
 March 25-29, *Thursday through Monday* — Special examinations  
 March 26-29, *Friday and Monday* — Change-in-registration period  
 March 27, *Saturday* — Classes (Wed. schedule)  
 March 29, *Monday* — Last day for new registrations  
 April 10, *Saturday* — Village Fair  
 April 27, *Tuesday* — General Faculty Meeting  
 April 28, *Wednesday* — Reporting of mid-quarter deficiencies  
 May 3-4, *Monday and Tuesday* — Pre-registration for Summer Quarter  
 May 5, *Wednesday* — Honors Day  
 \*May 29-June 2, *Saturday through Wednesday* — Final examinations  
 June 3, *Thursday* — Graduation exercises

## 1965—Summer Quarter

May 26, *Wednesday* — Last day for filing applications  
 June 14-15, *Monday and Tuesday* — Registration  
 June 16, *Wednesday*, 7:00 a.m. — Classwork begins  
 June 16-19, *Wednesday through Saturday* — Special examinations  
 June 17, *Thursday* — Last day for term registration  
 June 17-18, *Thursday and Friday* — Change-in-registration period  
 June 18, *Friday* — Last day for registration or adding courses  
 June 19, *Saturday* — Classes (Tuesday schedule)  
 July 16, *Friday* — Final examinations first term; reporting of mid-quarter deficiencies  
 July 19, *Monday* — Classwork begins for second term students  
 August 20, *Friday* — Last day of classes for second term students  
 \*August 20-23, *Friday through Monday* — Final examinations for quarter  
 August 21, *Saturday* — Final examinations for second term  
 August 24, *Tuesday* — Graduation exercises

\* Approved group examinations limited to four-day period prior to this date.

## JANUARY

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## FEBRUARY

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## MARCH

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## APRIL

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## MAY

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## JUNE

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# The Auburn Board of Trustees

Under the organic and statutory laws of Alabama, Auburn University is governed by a Board of Trustees consisting of one member from each congressional district, as these districts were constituted on January 1, 1961, an extra member from the congressional district in which the institution is located, and the Governor and State Superintendent of Education, who are ex-officio members. The Governor is chairman. Members of the Board of Trustees are appointed by the Governor by and with the advice and consent of the State Senate and hold office for terms of twelve years. Members of the board receive no compensation.

The Board of Trustees places administrative authority and responsibility in the hands of an administrative officer at Auburn University. The institution is grouped for administrative purposes into divisions, schools, and departments.

## *Members of the Board*

His Excellency, GEORGE C. WALLACE, Governor, President (Ex-officio).....Montgomery  
A. R. MEADOWS, State Superintendent of Education (Ex-officio).....Montgomery

### Term Expires 1967

<i>Name</i>	<i>District</i>	<i>Home</i>
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M. H. MOSES	<i>Fifth</i>	Fyffe
PAUL S. HALEY, Vice-President	<i>Seventh</i>	Jasper

### Term Expires 1971

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REDUS COLLIER	<i>Eighth</i>	Decatur
JOHN W. OVERTON	<i>Second</i>	Montgomery

### Term Expires 1975

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ROBERTS H. BROWN	<i>Third</i>	Opelika
FRANK P. SAMFORD	<i>Ninth</i>	Birmingham

### BERTA DUNN, Secretary

FIRST DISTRICT COUNTIES: Choctaw, Clarke, Marengo, Mobile, Monroe, Washington and Wilcox.

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THIRD DISTRICT COUNTIES: Barbour, Bullock, Coffee, Dale, Geneva, Henry, Houston, Lee, Macon and Russell.

FOURTH DISTRICT COUNTIES: Autauga, Calhoun, Clay, Coosa, Dallas, Elmore, St. Clair and Talladega.

FIFTH DISTRICT COUNTIES: Chambers, Cherokee, Cleburne, DeKalb, Etowah, Marshall, Randolph and Tallapoosa.

SIXTH DISTRICT COUNTIES: Bibb, Chilton, Greene, Hale, Perry, Shelby, Sumter and Tuscaloosa.

SEVENTH DISTRICT COUNTIES: Blount, Cullman, Fayette, Franklin, Lamar, Marion, Pickens, Walker and Winston.

EIGHTH DISTRICT COUNTIES: Colbert, Jackson, Lauderdale, Lawrence, Limestone, Madison and Morgan.

NINTH DISTRICT COUNTY: Jefferson.

# The University Administration

DRAUGHON, RALPH BROWN, *President*  
ANDERSON, ROBERT C., *Executive Vice-President*  
VALLERY, H. F., *Assistant to the President*

## ADMINISTRATIVE COUNCIL

DRAUGHON, RALPH BROWN, *President*  
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VALLERY, H. F., *Assistant to the President*  
HUNTLEY, MICHEL C., *Dean of Faculties*  
PARKER, W. V., *Dean of the Graduate School*  
ROBERTSON, FRED R., *Director of Agricultural Extension Service*  
SMITH, E. V., *Director of Agricultural Experiment Station System*  
FUNCHESS, L. E., *Director of Buildings and Grounds*  
INGRAM, WILLIAM T., *Business Manager*  
CRAWFORD, EDWIN M., *Director of University Relations*  
SARVER, JOSEPH B., *Director of Development*  
TINCHER, WILBUR A., *Director of Institutional Research*

## COUNCIL OF DEANS

DRAUGHON, RALPH BROWN, *President (Ex-officio)*  
ANDERSON, ROBERT C., *Executive Vice-President (Ex-officio)*  
HUNTLEY, MICHEL C., *Dean of Faculties, Chairman*  
ALLEN, ROGER W., *Dean, School of Science and Literature*  
CATER, KATHARINE C., *Dean of Women*  
COKER, S. T., *Dean, School of Pharmacy*  
FOY, JAMES E., *Dean, Student Affairs*  
GREENE, JAMES E., *Dean, School of Veterinary Medicine*  
PARKER, W. V., *Dean, Graduate School*  
PIERCE, TRUMAN M., *Dean, School of Education*  
PUMPHREY, FRED H., *Dean, School of Engineering*  
SAUNDERS, C. R., *Dean, School of Chemistry*  
SMITH, E. V., *Dean, School of Agriculture*  
SPEER, WILLIAM A., *Dean, School of Architecture and The Arts*  
SPIDLE, MARION W., *Dean, School of Home Economics*  
JOHNSON, A. G. W., *Professor of Military Science*  
WILLIAMS, RALPH I., *Professor of Air Science and the Commandant*  
CURTIS, FREDERICK L., *Professor of Naval Science and the Commanding Officer*  
EDWARDS, CHARLES W., *Registrar*  
CANTRELL, CLYDE H., *Director of Libraries*  
AUTREY, K. M., *Chairman, Faculty Council*  
BRUMFIELD, EDWARD JAY, *Director of Admissions*

## ADMINISTRATIVE FACULTY

ANDREWS, WARREN M. \_\_\_\_\_ *Special Assistant to the President*  
for the Nuclear Science Center, 1961  
B.S., Auburn University; M.S., Vanderbilt University; M.S., Ph.D., University of California.  
BAILEY, WILFORD S. \_\_\_\_\_ *Associate Dean, Graduate School, and*  
Coordinator of Research, 1942, 1962  
D.V.M., M.S., Auburn University; Sc.D., Johns Hopkins University.  
BEAR, ROBERT J. \_\_\_\_\_ *Comptroller and Assistant Treasurer, Business Office, 1961*  
B.S., Cornell University; M.B.A., George Washington University.  
BEARD, G. W. \_\_\_\_\_ *Director of Athletics, 1937, 1951*  
B.S., Auburn University.  
BRADLEY, MARY HART \_\_\_\_\_ *Assistant Dean of Women, 1962, 1963*  
B.S., M.A., University of Alabama.

- \*\*BRENKERT, KARL, JR.** ..... *Assistant Dean, School of Engineering and  
Assistant Director of Engineering Experiment Station, (P.E.), 1960*  
B.S.E., University of Michigan; M.S., Ph.D., Stanford University.
- BROWN, MORGAN WITHERILL** ..... *Director of Student Health, 1950*  
B.S., University of Alabama; M.D., Tulane School of Medicine.
- BRUMFIELD, EDWARD JAY** ..... *Director of Admissions, 1953, 1961*  
B.A., M.A., University of Kentucky.
- CAIN, JOHN LEONARD** ..... *Director of Engineering Extension, 1962*  
B.Ch.E., Georgia Institute of Technology.
- CANTRELL, CLYDE HULL** ..... *Director of Libraries and Professor, 1944, 1959*  
A.B., A.B.L.S., M.S., University of North Carolina; Ph.D., University of Illinois.
- CATER, KATHARINE COOPER** ..... *Dean of Women and Social Director, 1946*  
A.B., Limestone College; M.A., Mercer University; M.S., Syracuse University; Litt.D., Limestone College.
- COLEMAN, MRS. MARY E.** ..... *State Home Demonstration Agent, 1936, 1958*  
B.S., Auburn University; M.S., Columbia University.
- COLLINS, DAVID ARTHUR** ..... *Assistant Dean of Student Affairs, 1962*  
B.A., Presbyterian College; M.A., Memphis State University.
- CRAWFORD, EDWIN M.** ..... *Director of University Relations, 1962*  
B.S., Auburn University.
- DUNLAP, JOHN FRETWELL** ..... *Director of Student Financial Aid, 1959, 1962*  
B.S., Clemson College.
- EDWARDS, CHARLES WESLEY** ..... *Registrar, 1927, 1938*  
B.S., Auburn University; M.A., Harvard University.
- FOY, JAMES EDGAR** ..... *Dean of Student Affairs, 1950, 1962*  
A.B., M.A., University of Alabama.
- FUNCHESS, LINWOOD E.** ..... *Director of Buildings and Grounds, 1957*  
B.S., Auburn University; M.S., Cornell University.
- GRANT, WILLIAM HAROLD** ..... *Director of Student Counseling Service, 1958, 1963*  
B.S., Auburn University.
- INGRAM, WILLIAM TRAVIS** ..... *Business Manager and Treasurer, 1925, 1953*
- JONES, RALPH R.** ..... *Associate Director of Agricultural Extension  
Service, 1938, 1962*  
B.S., Auburn University; M.S., Michigan State University.
- JONSON, WILLIAM CRAWFORD, JR.** ..... *Director of Auburn Research  
Foundation, 1956, 1959*  
B.S., U.S. Naval Academy.
- POORE, WILLIAM D.** ..... *Director of University Personnel Office, 1957, 1961*  
B.S., M.A., University of Illinois.
- REAVES, RAYMOND M.** ..... *Assistant to the Director, Field Service,  
Agricultural Extension Service, 1927, 1962*  
B.S., Auburn University.
- ROBERTSON, FRED R.** ..... *Director of Agricultural Extension Service, 1959, 1962*  
B.S., M.S., University of Tennessee; D.P.A., Harvard University.
- SARVER, JOSEPH B.** ..... *Executive Secretary of Alumni Association  
Director of AU Development Program, 1951, 1960*  
B.S., Auburn University.
- SIMMONS, CHARLES FERDINAND** ..... *Associate Dean, School of Agriculture  
Assistant Director, Agricultural Experiment Station, 1946, 1955*  
B.S., M.S., Auburn University; Ph.D., Ohio State University.
- TAYLOR, W. H.** ..... *Assistant to the Director, Rural Resource  
Development, Agricultural Extension Service, 1946, 1962*  
B.S., Auburn University; M.S., Cornell University.
- TINCHER, WILBUR A., JR.** ..... *Director of Institutional Research, 1958, 1963*  
A.B., M.A., Ed.D., University of Kentucky.
- WARREN, HOYT M.** ..... *Assistant to the Director, Programs,  
Agricultural Extension Service, 1945, 1961*  
B.S., Auburn University; M.S., Ed.D., Cornell University.
- WEGENER, EDWARD PALMER** ..... *Director of Educational Television, 1954*  
B.S., University of Minnesota.
- WILSON, COYT TAYLOR** ..... *Associate Director, Agricultural Experiment  
Station, Assistant Dean, School of Agriculture, 1938, 1955*  
B.S., M.S., Auburn University; Ph.D., University of Minnesota.
- ZALLEN, HAROLD** ..... *Radiological Safety Officer, Associate Professor  
of Pharmacy, 1961, 1963*  
B.S., Northeastern University; Ed.M., Boston University; M.S., Ph.D., Purdue University.

# Faculty and Staff

1963-1964

(The first date after the title indicates the year of first appointment to any position in the institution; the second, the year of appointment to present rank. Effective date of resignation shown only for persons whose names were not carried in a previous catalog.)

- DRAUGHON, RALPH BROWN** *President*, 1931, 1948  
B.S., M.S., Auburn University; LL.D., Birmingham-Southern College; L.H.D., Howard College; LL.D., University of Alabama.
- ANDERSON, ROBERT C.** *Executive Vice-President*, 1961  
B.S., Auburn University; M.A., University of North Carolina; Ph.D., New York University.
- VALLERY, H. F.** *Assistant to the President*, 1950, 1960  
B.A., M.A., Louisiana State University; M.A., Ed.D., Columbia University.
- HUNTLEY, MICHEL C.** *Dean of Faculties*, 1949  
B.A., Millsaps College; M.A., Emory University; LL.D., Millsaps College; Litt. D., University of Miami.
- ABBOTT, MAX GARDNER** *Head Professor of Educational Administration*, 1963  
B.S., M.S., Utah State University; Ph.D., University of Chicago.
- ABNEY, LOUIS O.** *Associate Professor of Art*, 1950, 1959  
B.App.Art, M.App.Art, Auburn University.
- ADAMS, CLEVELAND L.** *Head Professor of Textile Technology*, 1952  
B.T.E., Auburn University.
- ADAMS, FRED** *Associate Professor of Agronomy and Soils*, 1955  
B.S., M.S., Louisiana State University; Ph.D., University of California.
- ALBERT, ROOSEVELT A.** *Instructor in Small Animal Surgery and Medicine*, 1962  
D.V.M., Auburn University.
- ALEXANDER, HERMAN D.** *Associate Professor of Physiology and Pharmacology*, 1950, 1963  
B.S., M.S., Ph.D., Auburn University.
- ALFORD, MARGARET S.** *Instructor in Bacteriology*, 1961  
B.S., Western Kentucky State College; M.S., University of Kentucky.
- ALLEN, ROGER WILLIAMS** *Dean, School of Science and Literature*, 1928, 1941  
B.S., M.S., Auburn University; M.S., University of Michigan; Ph.D., Columbia University.
- ALLISON, RAY** *Associate Professor of Zoology-Entomology*, 1950, 1958  
B.S., Western Carolina Teachers College; M.S., North Carolina State College; Ph.D., Louisiana State University.
- \*ALVORD, MARY K.** *Instructor in Mathematics*, 1942  
B.S., University of Illinois.
- \*AMACHER, ANNE W.** *Assistant Professor of English*, 1962  
B.A., Agnes Scott College; M.A., Radcliffe College; Ph.D., New York University.
- AMACHER, RICHARD E.** *Associate Professor of English*, 1957  
A.B., Ohio University; Ph.D., University of Pittsburgh.
- AMLING, HARRY J.** *Associate Professor of Horticulture*, 1958, 1959  
B.S., Rutgers University; M.S., University of Delaware; Ph.D., Michigan State University.
- ANSON, CHARLES P.** *Head Professor of Economics and Business Administration*, 1946  
A.B., University of Wisconsin; M.A., Ohio State University; Ph.D., Univ. of North Carolina.
- ANTHONY, W. B.** *Professor of Animal Science*, 1953, 1955  
B.S., University of Illinois; M.S., Texas A. & M. College; Ph.D., Cornell University.
- APPLEBEE, FRANK W.** *Head Professor of Art*, 1926, 1932  
Diploma, Massachusetts College of Art; B.S., M.App.Art, Auburn University.
- \*APPLEBEE, MARTHA S.** *Instructor in Secondary Education*, 1950, 1963  
B.A., Denison University; M.A., State University of Iowa.
- ARANT, FRANK S.** *Head of Department, Zoology-Entomology*, 1926, 1949  
B.S., M.S., Auburn University; Ph.D., Iowa State University.
- ASKEW, RAYMOND F.** *Assistant Professor of Physics*, 1960  
B.S., Birmingham-Southern College; M.S., Ph.D., University of Virginia.

\* Temporary.

- ATKINS, ALWYN J. *Acting Head Professor of Secondary Education*, 1956, 1961  
B.S., University of Chattanooga; M.S., Ph.D., University of North Carolina.
- ATKINS, GEORGE A. *Assistant Football Coach*, 1956  
B.S., Auburn University.
- \*ATKINS, LEAH R. *Instructor in History and Political Science*, 1958, 1962  
B.S., M.A., Auburn University.
- ATTLEBERGER, FREDERICK RAYMOND *Instructor in Laboratory Technology*, 1941, 1944  
M.T., Franklin School of Science and Arts.
- \*\*ATTLEBERGER, MARIE H. *Associate Professor of Bacteriology*, 1947, 1959  
D.V.M., M.S., Auburn University.
- AUTREY, K. M. *Head of Department, Dairy Science*, 1947  
B.S., Louisiana State University; M.S., Ph.D., Iowa State University.
- BACWELL, JAMES E. *Assistant Professor of Economics and Business Administration*, 1950, 1956  
B.S., M.S., University of North Carolina.
- BAKER, J. MARSHALL *Associate Professor of Chemistry*, 1957  
B.S., Missouri Valley College; M.S., Ohio State University; Ph.D., University of Missouri.
- BAKER, MAURICE F. *Professor of Zoology-Entomology*, 1958  
B.S., M.S., Iowa State University; Ph.D., University of Kansas.
- BAKER, RICHARD ALBERT *Assistant Professor of Agricultural Education*, 1963  
B.S., M.S., Auburn University.
- BALCH, BILLY W. *Instructor in Economics and Business Administration*, 1960  
B.S., Florence State College; M.B.A., University of Alabama.
- BALL, RICHARD WILLIAM *Professor of Mathematics*, 1954, 1960  
B.A., M.A., Ph.D., University of Illinois.
- BARBIN, ALLEN RAY *Associate Professor of Mechanical Engineering*, 1961  
B.S.M.E., Lamar State College of Technology; M.S.M.E., Texas A. & M. College; Ph.D., Purdue University.
- BARFIELD, JOHN R. *Instructor in Economics and Business Administration*, 1964  
B.B.A., M.B.A., University of Georgia.
- BARKSDALE, JELKS *Associate Professor of Chemistry*, 1946, 1957  
B.S., M.S., University of Alabama; Ph.D., Columbia University.
- BARKSDALE, ROBBIE ANDREWS *Catalog Librarian and Instructor*, 1949, 1959  
A.B., Alabama College; B.S.L.S., M.S.L.S., Columbia University.
- BARNA, PETER STEPHEN *Associate Professor of Aerospace Engineering*, 1963  
B.E., University of Budapest; M.E., University of Sydney.
- BARNES, BENNY B. *Instructor in Electrical Engineering*, 1963  
B.E.E., Auburn University; M.S.E.E., University of Alabama.
- BARNES, ROBERT C. *Assistant Professor of Drama*, 1963  
B.F.A., M.F.A., Carnegie Institute of Technology.
- \*BARNHART, ROBERT EDWARD *Instructor in Pathology and Parasitology*, 1963  
D.V.M., Auburn University.
- \*BARRINGTON, WILLIAM NORMAN *Instructor in Health, Physical Education and Recreation*, 1963  
B.S., Auburn University; M.S., Peabody College (Resigned Eff. 12-31-63).
- BASKERVILL, MARGARET *Assistant Professor of Mathematics*, 1943, 1959  
A.B., Randolph-Macon Women's College; M.A., University of Michigan; Ph.D., Auburn University.
- BASS, MAX H. *Assistant Professor of Zoology-Entomology*, 1957, 1963  
B.S., Troy State College; M.S., Auburn University.
- \*BASS, MERLE *Instructor in Mathematics*, 1957, 1963  
B.S., Troy State College; M.S., Auburn University.
- BEALS, HAROLD O. *Assistant Professor of Forestry*, 1960  
B.S.F., M.S., Ph.D., Purdue University.
- BEAUCHAMP, BESS *Catalog Librarian and Instructor*, 1960  
A.B., Hendrix College; M.A., Claremont Graduate School; M.A.L.S., Peabody College.
- BELL, LARRY L. *Instructor in Industrial Engineering*, 1962  
B.S.B.A., Auburn University.

\* Temporary.

\*\* On leave.

- BELSER, THOMAS ARVIN, JR. Associate Professor of History and  
B.A., M.A., Ph.D., Vanderbilt University. Political Science, 1957, 1963
- BENGTSON, EDWIN JOSEPH Instructor in Health, Physical Education  
B.S., M.S., Springfield College. and Recreation, 1963
- BENSON, CARL Professor of English, 1947, 1963  
B.S., M.A., University of Texas; Ph.D., University of Illinois.
- BENTLEY, CHARLES A. Associate Professor of Music, 1949, 1957  
B.S.M., Baldwin-Wallace College; M.A., Professional Diploma, "Specialist in Music Education," Columbia University.
- BENTON, DEWARD E. Instructor in Economics and Business  
B.S., University of Maryland; M.B.A., Auburn University. Administration, 1961, 1962
- BERGER, ROBERT S. Associate Professor of Zoology-Entomology, 1963  
B.S., M.S., A. & M. College of Texas; Ph.D., Cornell University.
- BLACKSTONE, J. HOMER Professor of Agricultural Economics, 1938, 1953  
B.S., M.S., Auburn University.
- BLACKWELL, PAUL HOUSTON, JR. Assistant Professor of Military Science, 1962  
B.S., University of Maryland; Major, USA.
- BLAKE, GEORGE H., JR. Associate Professor of Zoology-Entomology, 1947, 1956  
B.S., M.S., Auburn University; Ph.D., University of Illinois.
- BLAKNEY, WILLIAM G. G. Associate Professor of Civil  
Engineering (P.E.), 1958, 1961  
B.E., Nova Scotia Technical College; M.Sc., Ohio State University.
- \*BLISS, LEORA B. Assistant Professor of Home Economics, 1957  
B.S., Kansas State University; M.S., Oregon State University.
- BLISS, RUSSELL L. Assistant Professor of Economics and Business  
B.A., Mount Union College; M.A., University of Kentucky. Administration, 1957, 1959
- BONIN, JOSEPH Professor of Economics and Business Administration, 1960, 1963  
B.S., Spring Hill College; M.A., Ph.D., Louisiana State University.
- BOOZER, REUBEN BRYAN Instructor in Zoology-Entomology, 1963  
B.S., Jacksonville State College; M.A., Peabody College.
- BOSTON, ROBERT O. Associate Professor of Economics and  
Business Administration, 1950, 1959  
B.S., M.S., University of Alabama.
- BOTTOMS, DAVID NEWTON Associate Professor of Agricultural  
Education, 1941, 1947  
B.S., M.S., Auburn University.
- BOVINETT, LEE R. Assistant Professor of Air Science, 1960  
B.S., Florida State University; Captain, USAF.
- BOYD, LUTHER RHINEHART Instructor in Economics and Business  
B.S., M.S., University of Southern Mississippi. Administration, 1963
- BOYKIN, WILLIAM HENRY, JR. Instructor in Mechanical Engineering, 1961, 1963  
B.E.P., B.S.M.E., Auburn University.
- BRADBERRY, GEORGE L. Assistant Football Coach, 1951  
B.S., University of Georgia.
- BRISSON, DAVID WINSLOW Assistant Professor of Architecture, 1958  
B.F.A., Rhode Island School of Design; M.F.A., Ohio University.
- BROTHERS, JAMES RUSSELL Assistant in Electrical Engineering, 1962  
B.S.E.E., Auburn University.
- BROWN, EDNA EARLE Serials Librarian and Instructor, 1952, 1959  
A.B., Peabody College; B.S.L.S., University of Illinois.
- BROWN, HELEN WEAVER Instructor in Economics and Business  
B.S., Alabama College; M.Ed., Auburn University. Administration, 1959, 1960
- BUDENSTEIN, PAUL P. Associate Research Professor of Physics, 1958, 1962  
B.A., Temple University; M.S., Ph.D., Lehigh University.
- BUNGER, WILLIAM B. Associate Research Professor of Chemistry, 1949, 1957  
B.S., Washburn University; M.S., Ph.D., Kansas State University.
- BURKHARDT, E. WALTER Professor of Architecture, 1929  
B.S.Arch., Washington State University; M.S.Arch., Columbia University.
- BURNETT, PAUL C. Associate Professor of English, 1948, 1954  
B.A., Louisiana Polytechnic Institute; M.A., Louisiana State University.

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- BURNS, MOORE J. *Professor of Physiology and Pharmacology*, 1950, 1962  
B.S., M.S., Auburn University; Ph.D., Purdue University.
- BURTON, LEONARD PATILLO *Professor of Mathematics*, 1954, 1960  
A.B., M.A., University of Alabama; Ph.D., University of North Carolina.
- BUTLER, ALLEN DEXTER *Assistant Professor of English*, 1927, 1955  
A.B., M.A., University of North Carolina.
- BUTZ, ROBERT K. *Professor of Mathematics*, 1950, 1963  
B.S., Colorado State University; M.S., Ph.D., University of Georgia.
- \*CABRERA, DEOGRACIAS J. *Research Associate of Pathology-Parasitology*, 1962  
D.V.M., University of Philippines; LL.B., Manila Law College.
- \*CADENHEAD, A. KENNETH *Acting Assistant Professor of Education*, 1963  
B.S., M.Ed., University of Georgia.
- CAIRNS, ELDON J. *Professor of Botany and Plant Pathology*, 1954, 1955  
B.A., M.A., University of California (Los Angeles); Ph.D., University of Maryland.
- CALDER, JAMES RICHARD *Assistant Professor of Mathematics*, 1963  
B.S., Trinity of Texas-University of Texas; M.A., University of Texas.
- \*CANNON, LENA FRANCES *Assistant Professor of Home Economics*, 1948, 1953  
B.S., M.S., West Virginia University.
- CANNON, ROBERT Y. *Professor of Dairy Science*, 1948, 1960  
B.S., Iowa State University; M.S., Ohio State University; Ph.D., University of Wisconsin.
- CAPPS, JULIUS DANIEL *Research Professor of Chemistry*, 1934, 1953  
B.S., M.S., Auburn University; Ph.D., University of Nebraska.
- CARLOVITZ, GILES HOMER *Professor of Electrical Engineering (P.E.)*, 1928, 1934  
B.S., B.S.E.E., Auburn University.
- CARR, HOWARD E. *Head Professor of Physics*, 1948, 1953  
B.S., Auburn University; M.A., Ph.D., University of Virginia.
- CARTER, JOHN LELAND *Assistant Professor of Secondary Education*, 1962  
B.A., Sam Houston State College.
- CARTER, MASON CARLTON *Assistant Professor of Forestry*, 1960  
B.S., M.S., Virginia Polytechnic Institute; D.F., Duke University.
- CAUDLE, ANN HUSSEY *Associate Professor of Home Economics*, 1963  
B.S., M.S., Auburn University; Ph.D., Florida State University.
- CHADWICK, JAMES H. *Associate Professor of Electrical Engineering*, 1949  
B.S., U.S. Naval Academy; M.S.E.E., Columbia University.
- CHASTAIN, EDWARD D., Jr. *Professor of Economics and Business Administration*, 1956, 1963  
B.S., Clemson College; M.S., Cornell University; Ph.D., Purdue University.
- \*CHERRY, CAVA *Professor of Secondary Education*, 1963  
AB., Huntingdon College; M.A., Columbia University. (Resigned 8-31-63)
- CHRISTEN, HAROLD EDWIN *Professor of Forestry*, 1946, 1951  
B.S., University of Connecticut; M.F., Yale University; Ph.D., Michigan State University.
- CLARK, CARL H. *Head Professor of Physiology-Pharmacology*, 1953  
B.S., D.V.M., Washington State University; M.S., Ph.D., Ohio State University.
- CLARK, EDWARD M. *Associate Professor of Botany and Plant Pathology*, 1956, 1962  
B.S., M.S., Ph.D., University of Minnesota.
- CLARK, ROY GARLAND *Instructor in Economics and Business Administration*, 1962  
B.S., M.S., University of Southern Mississippi.
- CLAUSEN, GEORGE E. *Assistant in Electrical Engineering*, 1962  
B.S.E.E., Auburn University.
- COBB, CHARLES N. *Professor of Industrial Engineering (P.E.)*, 1930, 1961  
B.S., Clemson College; B.I.E., M.S., Auburn University.
- \*CODY, REYNOLDS M. *Assistant Professor of Bacteriology*, 1963  
B.S., University of Tennessee; M.S., Ph.D., Mississippi State University.
- COKER, SAMUEL TERRY *Dean, School of Pharmacy*, 1959  
B.S., Auburn University; M.S., Ph.D., Purdue University.
- COLE, DONALD *Assistant Professor of Architecture*, 1963  
B.S., Bucknell University; M.F.A., State University of Iowa.



- COLE, ROGER W. \_\_\_\_\_ Instructor in English, 1962  
B.A., M.A.T., University of Florida.
- COLLINS, BASIL K. \_\_\_\_\_ Associate Professor of Engineering  
B.S., B.M.E., M.S., Auburn University. Graphics (P.E.), 1936, 1955
- \*COMPERE, WILLIAM ARTHUR \_\_\_\_\_ Instructor in Mathematics, 1963  
B.A., Mississippi College; M.Ed., Mississippi State University; M.S., University of Mississippi.
- CONNALLY, JOSEPH H. \_\_\_\_\_ Assistant Football Coach, 1952  
B.S., University of Georgia.
- \*COOK, CAMILLE W. \_\_\_\_\_ Instructor in Economics and Business Administration, 1948  
A.B., LL.B., University of Alabama.
- COOK, HOWARD \_\_\_\_\_ Research Assistant Professor of Mathematics, 1961, 1962  
B.S., Clemson College; Ph.D., University of Texas.
- COOK, J. SYDNEY, JR. \_\_\_\_\_ Associate Professor of Economics and  
Business Administration, 1947, 1963  
B.S., Auburn University; LL.B., University of Alabama; LL.M., New York University.
- COOK, JAMES WALTER \_\_\_\_\_ Assistant in Electrical Engineering, 1962  
B.S.E.E., Auburn University.
- COOLEY, IRWIN D. \_\_\_\_\_ Assistant Professor of Mechanical Engineering, 1962  
B.S.C.E., Duke University; M.S.E., University of Florida.
- COOPER, ARTHUR WIGGINS \_\_\_\_\_ Research Lecturer, Agricultural  
Engineering (P.E.), 1939, 1957  
B.S., M.S., Auburn University; Ph.D., Michigan State University.
- COPPEDGE, WILLIAM H. \_\_\_\_\_ Associate Professor of Industrial Engineering, 1928, 1944  
B.S., Oklahoma State University; M.S., Auburn University.
- COSG, ARTHUR FULTON \_\_\_\_\_ Head Professor of Elementary Education, 1962  
B.E., Northern Illinois University; M.A., Northwestern University; Ed.D., Indiana University.
- COTTER, G. J. \_\_\_\_\_ Professor of Poultry Science, 1930, 1949  
B.S., D.V.M., Auburn University; M.S., University of Missouri.
- \*COUPLAND, JOE \_\_\_\_\_ Professor of Education, 1963  
B.S., M.S., Auburn University; Ph.D., Ohio State University. (Resigned 7-15-63)
- COX, JULIUS GRADY \_\_\_\_\_ Head Professor of Industrial Engineering (P.E.), 1957, 1963  
B.M.E., M.S., Auburn University.
- \*\*CRAWFORD, RICHARD P. \_\_\_\_\_ Assistant Professor of Bacteriology, 1956, 1960  
D.V.M., Texas A. & M. College; M.S., Auburn University; M.P.H., University of Minnesota.
- CREWS, ROBERT T. \_\_\_\_\_ Instructor in Laboratory Technology, 1959  
B.S., Auburn University.
- CURL, ELROY A. \_\_\_\_\_ Associate Professor of Botany and Plant  
Pathology, 1954, 1958  
B.S., Louisiana Polytechnic Institute; M.S., University of Arkansas; Ph.D., University of Illinois.
- CURRENT-GARCIA, EUGENE \_\_\_\_\_ Professor of English, 1947, 1952  
B.A., M.A., Tulane University; A.M., Ph.D., Harvard University.
- CURTIS, FREDERICK L. \_\_\_\_\_ Commanding Officer and Professor of  
B.A., University of Washington; Captain, U.S. Navy. Naval Science, 1962
- CURTIS, WAYNE COSTON \_\_\_\_\_ Instructor in Economics and Business  
Administration, 1962, 1963  
B.S., M.S., Auburn University.
- DANNER, MAURICE J. \_\_\_\_\_ Professor of Agricultural Economics, 1943, 1957  
B.S., Texas Tech Institute; M.S., University of Tennessee.
- DARDEN, PAUL ALBERT \_\_\_\_\_ Assistant Professor of Building Technology, 1958  
B.Arch., Auburn University.
- DARWIN, JAMES THOMAS \_\_\_\_\_ Assistant Professor of Mathematics, 1963  
B.S., Ph.D., University of Texas.
- DAVIS, DONALD E. \_\_\_\_\_ Professor of Botany and Plant Pathology, 1947, 1955  
B.Ed., Ped.D., Eastern Illinois University; M.S., Ph.D., Ohio State University.
- DAVIS, FRANK B. \_\_\_\_\_ Head Professor of Speech, 1948, 1956  
A.B., Hendrix College; M.A., University of Iowa; Ph.D., Louisiana State University.
- DAVIS, NICHOLAS DICK \_\_\_\_\_ Assistant Professor of Architecture, 1963  
B.A., B.S., Arch., Rice University; M.F.A. Arch., Princeton University.

\* Temporary.

\*\* On leave.

- DAVIS, NORMAN D. *Associate Professor of Botany and Plant Pathology*, 1958, 1961  
B.S., University of Georgia; M.S., Ph.D., Ohio State University.
- \*DAVIS, ROY DALE *Assistant Professor of Mathematics*, 1963  
B.A., University of Texas. (Resigned 8-31-63)
- DAVIS, W. L. *Professor of Secondary Education, Coordinator of Curriculum and Teaching and Coordinator of International Paper Company Foundation Program in Secondary Education*, 1951, 1958  
B.S., Middle Tennessee State College; M.A., Peabody College; Ed.D., Columbia University.
- DAWSON, MARVIN, JR. *Assistant Professor of Education and Coordinator, Learning Resources Center*, 1963  
B.S., University of Alabama; M.S., Indiana University.
- DAWSON, WILLIAM W. *Assistant Research Professor of Psychology*, 1963  
A.B., Vanderbilt University; M.S., Ph.D., Florida State University.
- DEAN, H. SHELBY *Assistant Professor of Building Technology*, 1954, 1956  
B.Arch., Auburn University.
- DEBRUNNER, L. EARL *Assistant Professor of Forestry*, 1961  
B.S., University of Cincinnati; M.F., Yale University.
- DENDY, EMMA S. *Catalog Librarian and Instructor*, 1960  
A.B., Flora MacDonald College; B.S.L.S., Peabody College; M.S.L.S., University of North Carolina.
- DENDY, JOHN STILES *Professor of Zoology-Entomology*, 1947, 1957  
B.S., Presbyterian College; M.A., University of North Carolina; Ph.D., University of Michigan.
- DENSON, ROBERT VICTOR *Instructor in Economics and Business Administration*, 1963  
B.S., M.S., Auburn University. (Resigned 8-31-63)
- DEVALL, WILBUR B. *Head of Department, Forestry*, 1946, 1951  
B.S., New York State College of Forestry; M.S., University of Florida.
- DIAMOND, DOUGLAS L. *Assistant Professor of Pathology-Parasitology*, 1960, 1961  
D.V.M., M.V.Sc., Ontario Veterinary College.
- DINIUS, ROBERT H. *Assistant Professor of Chemistry*, 1961  
B.S., Illinois Wesleyan University; M.S., University of Missouri; Ph.D., Florida State University.
- DIXON, JOE B. *Associate Professor of Agronomy and Soils*, 1959, 1962  
B.S., M.S., University of Kentucky; Ph.D., University of Wisconsin.
- DJORDJEVIC, BRANIMIR D. *Professor of Aerospace Engineering*, 1959  
A.E., M.E., University of Belgrade.
- DONNELLY, EDWARD DANIEL *Professor of Agronomy and Soils*, 1946, 1959  
B.S., M.S., Auburn University; Ph.D., Cornell University.
- DORMAN, COY *Assistant Professor of Economics and Business Administration*, 1959, 1963  
A.B., East Carolina College; M.S., University of Tennessee.
- \*DORNÉ, MELBA *Instructor in Speech*, 1957  
B.S., Western Kentucky State College; M.Ed., Auburn University.
- DORNÉ, WILLIAM P. *Associate Professor of Secondary Education*, 1950, 1963  
B.S., Rutgers University; M.A., Columbia University; Ph.D., University of Florida.
- DOUTY, HELEN IRENE *Associate Professor of Home Economics*, 1962  
B.S., M.S., Cornell University; Ph.D., Florida State University.
- DRAGOIN, ANTHONY *Assistant Professor of Health, Physical Education, and Recreation*, 1951, 1955  
B.S., M.S., Auburn University.
- DUMAS, WILLIAM T., JR. *Associate Professor of Agricultural Engineering (P.E.)*, 1946, 1955  
B.S., M.S., Auburn University.
- DUNKELBERGER, JOHN E. *Assistant Professor of Agricultural Economics*, 1962  
A.B., Franklin & Marshall College; M.S., Pennsylvania State University.
- DUPREE, JAMES EDWARD *Assistant in Electrical Engineering*, 1959, 1960  
B.S.E.E., Auburn University.
- DURANT, JACK DAVIS *Assistant Professor of English*, 1963  
A.B., Maryville College; M.A., Ph.D., University of Tennessee.
- DUSI, JULIAN L. *Professor of Zoology-Entomology*, 1949, 1963  
B.S., M.S., Ph.D., Ohio State University.
- EDEN, WILLIAM C. *Professor of Zoology-Entomology*, 1940, 1953  
B.S., M.S., Auburn University; Ph.D., University of Illinois.

- EDGAR, S. A. \_\_\_\_\_ *Professor of Poultry Science*, 1947, 1950  
A.B., Sterling College; M.S., Kansas State University; Ph.D., University of Wisconsin.
- EDWARDS, BARBARA F. \_\_\_\_\_ *Assistant Professor of Psychology*, 1957, 1963  
A.B., Western Michigan University; M.A., University of Michigan. (Resigned 8-31-63)
- EDWARDS, HARRY L. \_\_\_\_\_ *Assistant Professor of Air Science*, 1963  
B.A., Texas University; Major, U.S.A.F.
- \*EDWARDS, INEZ N. \_\_\_\_\_ *Instructor in History and Political Science*, 1955, 1963  
B.S., M.A., Auburn University. (Resigned 8-31-63)
- ELIZONDO, YNDALICIO ANDRES \_\_\_\_\_ *Associate Professor of Mechanical Engineering*, 1927, 1943  
B.S.C.E., B.S.M.E., M.S., Auburn University.
- ELLIOTT, CECIL D. \_\_\_\_\_ *Professor of Architecture*, 1962  
B.Arch., B.S.Arch.Eng., University of Oklahoma; M.Arch., Harvard University.
- ELLIOTT, GERALD F. \_\_\_\_\_ *Assistant Football Coach*, 1962  
B.S., Auburn University.
- ELLISON, MILDRED R. \_\_\_\_\_ *Associate Professor of Education*, 1958, 1961  
A.B., Huntingdon College; M.A., Ed.D., Columbia University.
- \*ENGLISH, DEWEY W. \_\_\_\_\_ *Instructor in Education*, 1963  
A.B., M.Ed., Mercer University.
- \*ENSMINGER, ISABEL S. \_\_\_\_\_ *Assistant Professor of Education*, 1945, 1961  
B.S.H.E., West Virginia University; M.S., University of Minnesota.
- ENSMINGER, L. E. \_\_\_\_\_ *Professor of Agronomy and Soils*, 1944, 1953  
B.S., University of Missouri; Ph.D., University of Illinois.
- ERWIN, CLYDE L. \_\_\_\_\_ *Assistant Professor of Economics and Business Administration*, 1960  
B.B.A., M.B.A., University of Mississippi.
- EUBANK, N. H. \_\_\_\_\_ *Instructor in Pathology and Parasitology*, 1961  
B.S., University of Tennessee; D.V.M., Auburn University.
- EVANS, DORIS \_\_\_\_\_ *Assistant Professor of Economics and Business Administration*, 1959, 1963  
B.S., Florence State College; M.A., Peabody College.
- EVANS, ROBERT K. \_\_\_\_\_ *Associate Professor of Health, Physical Education, and Recreation; Director of Intramural Sports*, 1942  
B.S., M.S., North Carolina State College.
- FAULK, RUTH T. \_\_\_\_\_ *Assistant Professor of English*, 1947, 1955  
A.B., Huntingdon College; M.S., Auburn University.
- FAUST, WILLIAM EDDIE \_\_\_\_\_ *Assistant in Electrical Engineering*, 1961  
B.S.E.E., Auburn University.
- FEASTER, WILLIAM M. \_\_\_\_\_ *Assistant Professor of Electrical Engineering (P.E.)*, 1956, 1959  
B.S.E.E., M.E.E., Auburn University.
- FELDMAN, ROGER G. \_\_\_\_\_ *Instructor in Bacteriology*, 1962  
D.V.M., Iowa State University.
- FERRARI, OLIVIO CARLO \_\_\_\_\_ *Assistant Professor of Architecture*, 1963  
Diploma, Solothurn Craft School; Diploma of Architecture, Ulm Graduate School of Design.
- \*FEW, ALBERT B. \_\_\_\_\_ *Assistant Professor of Anatomy and Histology*, 1963  
D.V.M., Auburn University.
- FINDLEY, MARSHALL E. \_\_\_\_\_ *Associate Research Professor of Chemical Engineering*, 1958  
B.S., Texas A. & M. College; M.S., Institute of Paper Chemistry; Ph.D., University of Florida.
- \*FINDLEY, SUSAN H. \_\_\_\_\_ *Instructor in History and Political Science*, 1960, 1963  
B.A., Agnes Scott College; M.A., Emory University.
- FISHER, HOMER S. \_\_\_\_\_ *Associate Professor of Horticulture*, 1935, 1948  
B.S., Auburn University; B.L.A., University of Massachusetts.
- \*FISHER, HOMER S., JR. \_\_\_\_\_ *Instructor in Economics and Business Administration*, 1962, 1963  
B.S., Auburn University.
- FITZGERALD, THEODORE C. \_\_\_\_\_ *Head Professor of Anatomy and Histology*, 1940, 1948  
D.V.M., M.S., Ohio State University.
- FITZPATRICK, BEN, JR. \_\_\_\_\_ *Associate Professor of Mathematics*, 1952, 1961  
B.S., Auburn University; M.A., Ph.D., University of Texas.
- \*FITZPATRICK, MARJORIE HIGGINS \_\_\_\_\_ *Instructor in Mathematics*, 1952, 1963  
B.S., Jacksonville State College; M.S., Auburn University.

- FITZPATRICK, MARY PRESTON. *Associate Professor of Health, Physical Education and Recreation*, 1962  
B.S., Middle Tennessee State College; M.A., Peabody College.
- FITZPATRICK, PHILLIP M. *Associate Professor of Mathematics*, 1962, 1963  
B.S., M.S., Ph.D., University of Oklahoma.
- FLUKER, BILLY JOE. *Associate Professor of Mechanical Engineering (P.E.)*, 1960  
B.S.E.E., M.S.M.E., Texas A. & M. College.
- \*FORD, RALPH M. *Assistant Professor of Mathematics*, 1960, 1963  
B.Ed., M.S., Ph.D., Auburn University. (Resigned 8-31-63)
- FORREST, EARL ARWIN, JR. *Head, Humanities Division and Associate Professor (Library)*, 1963  
B.S., North Texas State University; B.S.L.S., M.S.L.S., Columbia University; Ph.D., University of Illinois.
- FOURIER, ARTHUR E. *Head Professor of Health, Physical Education, and Recreation*, 1961  
B.S., University of Illinois; M.A., Ph.D., Peabody College.
- \*FOURIER, RUTH G. *Acting Humanities Librarian and Instructor*, 1962  
A.B., Vanderbilt University; M.A., University of South Carolina; Ph.D., Vanderbilt University.
- FOWLER, HOWARD GILL. *Assistant Professor of Industrial Engineering*, 1957  
B.S., Tennessee Polytechnic Institute; M.Ed., University of Florida.
- \*FOY, EMMA LOU. *Instructor in Economics and Business Administration*, 1952, 1964  
B.A., University of Alabama.
- \*FRADY, CHARLES S. *Instructor in Mathematics*, 1959, 1962  
B.S., Western Carolina College; M.S., Auburn University.
- FRANCE, MORGAN M. *Assistant Professor of Naval Science*, 1962  
B.S., College of the Holy Cross; Lieutenant, USN.
- \*FRANCIS, ROBERT JAY. *Visiting Professor of Education*, 1963  
A.B., Ohio Northern University; M.A., Western Kentucky State College; Ph.D., Ohio State University.
- FRANCIS, WILLIAM HUGH. *Head Professor of Engineering Graphics (P.E.)*, 1959  
B.S., M.S., Auburn University.
- \*FRENCH, FRANCIS C. *Instructor in Economics and Business Administration*, 1960  
B.A., M.S., Louisiana State University.
- FRENCH, JOHN D. *Associate Professor of Physics*, 1958, 1963  
B.S., M.S., Ph.D., Louisiana State University.
- FRISBY, CARL. *Assistant Professor of Economics and Business Administration*, 1953, 1957  
B.S., M.S., Auburn University.
- FUNDERBURK, H. HANLEY, JR. *Associate Professor of Botany and Plant Pathology*, 1961, 1963  
B.S., M.S., Auburn University; Ph.D., Louisiana State University.
- FURUTA, TOKUJI. *Professor of Horticulture*, 1951, 1962  
B.S., M.S., Ph.D., Ohio State University.
- GEARY, JACK C. *Associate Professor of Large and Small Animal Surgery and Medicine*, 1962  
D.V.M., Ohio State University.
- GEIGER, GRADY EUGENE. *Head, Circulation Division and Assistant Professor (Library)*, 1960, 1963  
B.S., Auburn University; A.M.L.S., University of Michigan.
- GIBBONS, WALTER J. *Professor of Large Animal Surgery and Medicine*, 1947, 1955  
D.V.M., M.S., Cornell University.
- GIBSON, ROBERT ROBBINS. *Instructor in Art*, 1962  
B.F.A., Industrial Design; B.F.A., Art Education, Carnegie Institute of Technology.
- \*GILBERT, J. D. *Associate Professor of Mathematics*, 1956, 1963  
B.S., Louisiana Polytechnic Institute; M.S., Ph.D., Auburn University. (Resigned 8-31-63)
- GILL, WILLIAM ROBERT. *Research Lecturer in Agricultural Engineering*, 1957  
B.S., Pennsylvania State University; M.S., University of Hawaii; Ph.D., Cornell University.
- GLYDE, EDGAR C. *Professor of Music*, 1946, 1957  
F.T.C.L., L.Mus.T.C.L., L.R.A.M., L.T.C.L. (London, England).
- \*GOGGANS, MALLETT. *Assistant Professor of Home Economics*, 1957, 1963  
B.S.H.E., University of Georgia; M.H.E., Auburn University.

- GOOD, HENRY G. \_\_\_\_\_ *Professor of Zoology-Entomology*, 1924, 1946  
B.S., University of California; M.S., Ph.D., Cornell University.
- GOODMAN, JOHN G. \_\_\_\_\_ *Associate Professor of Poultry Science*, 1939, 1946  
B.S., M.S., Auburn University.
- COOLSBY, HYRON C. \_\_\_\_\_ *Assistant Professor of Industrial Laboratories*, 1953, 1958  
B.S., M.Ed., Auburn University.
- GOSLIN, WILLIAM E. \_\_\_\_\_ *Assistant Professor of Botany and Plant Pathology*, 1959  
B.S., M.S., Ph.D., Ohio State University.
- \*GOSSEN, GLADYS \_\_\_\_\_ *Instructor in English*, 1945, 1963  
B.S., Northeast Missouri State College; M.S., Auburn University.
- GOSSEN, LEO G. \_\_\_\_\_ *Professor of English*, 1927, 1933  
B.S., Kirksville State College; Ph.D., University of Chicago.
- GRAF, EDWARD RAYMOND \_\_\_\_\_ *Associate Professor of Electrical Engineering*, 1957, 1963  
B.E.E., M.E.E., Auburn University; Ph.D., Institut für Hochfrequenztechnik, Stuttgart, Germany.
- GRAY, JOHN W. \_\_\_\_\_ *Assistant Professor of Speech*, 1959, 1963  
B.A., Ouachita Baptist College; M.A., University of Arkansas.
- GRAY, ROY C., JR. \_\_\_\_\_ *Instructor in Animal Science*, 1957  
B.S., M.S., University of Kentucky.
- GREEN, JOHN CHASE \_\_\_\_\_ *Assistant Professor of Speech*, 1947, 1950  
B.A., Yale University; M.S., University of Southern California.
- GREENE, JAMES ETHRIDGE \_\_\_\_\_ *Dean, Veterinary Medicine*, 1937, 1958  
D.V.M., M.S., Auburn University.
- GRITZ, IRVIN B. \_\_\_\_\_ *Associate Professor of Economics and Business Administration*, 1931, 1946  
B.S., M.S., Oklahoma State University.
- GROTH, AARON H., JR. \_\_\_\_\_ *Associate Professor of Pathology and Parasitology*, 1957, 1959  
B.S., D.V.M., Auburn University; M.S., Iowa State University.
- GUDAUSKAS, ROBERT T. \_\_\_\_\_ *Associate Professor of Botany and Plant Pathology*, 1961, 1963  
B.S., Eastern Illinois University; M.S., Ph.D., University of Illinois.
- GUNTER, PETE ADDISON \_\_\_\_\_ *Assistant Professor of Philosophy*, 1962  
B.A., University of Texas; B.A., Cambridge University; Ph.D., Yale University.
- HAINES, PAUL \_\_\_\_\_ *Professor of English*, 1947, 1952  
B.S., Lafayette College; M.A., Ohio Wesleyan University; Ph.D., New York University.
- HALE, DENNIS P. \_\_\_\_\_ *Assistant Professor of Economics and Business Administration*, 1957, 1959  
B.S., Middle Tennessee State College; M.A., Peabody College.
- HALE, FRANCES W. \_\_\_\_\_ *Assistant Professor of Economics and Business Administration*, 1956, 1959  
B.S., Troy State College; M.A., Peabody College.
- HALL, DANIEL D. \_\_\_\_\_ *Assistant Professor of Military Science*, 1962  
B.S., Textile Engr., Auburn University; B.S.C.E., Missouri School of Mines; Major, USA.
- \*HAMMETT, ROBERT EDGAR \_\_\_\_\_ *Assistant in Chemical Engineering*, 1962  
B.Ch.E., University of Delaware; M.S., Auburn University.
- HANSEN, LESTER T. \_\_\_\_\_ *Assistant Professor of Air Science*, 1961  
B.S., M.S., Utah State University; Captain, USAF.
- \*HARGETT, MARY ANNE \_\_\_\_\_ *Instructor in Music*, 1962, 1963  
B.M., Auburn University.
- HARGREAVES, GEORGE W. \_\_\_\_\_ *Professor of Pharmacy*, 1926, 1950  
B.S., M.S., Ph.C., University of Nebraska.
- HARLAN, RICHARD S. \_\_\_\_\_ *Assistant Professor of Physics*, 1959  
B.S., U.S. Naval Academy.
- HARMON, GRADY RODNEY \_\_\_\_\_ *Assistant in Mechanical Engineering*, 1962, 1964  
B.E.P., M.M.E., Auburn University.
- HARRIS, HUBERT \_\_\_\_\_ *Associate Professor of Horticulture*, 1936, 1963  
B.S., M.S., Auburn University.
- HARRIS, RALPH R. \_\_\_\_\_ *Associate Professor of Animal Science*, 1960, 1963  
B.S., M.S., Auburn University; Ph.D., Texas A. & M. College.
- HART, WILLIAM ARDLEY \_\_\_\_\_ *Assistant Professor of Chemistry*, 1963  
B.S., University of North Carolina; Ph.D., University of Florida.

- HARTMAN, MAURICE A. *Professor of Economics and Business Administration, 1956, 1963*  
B.S., High Point College; M.S., University of North Carolina; M.B.A., University of Texas; C.P.A. (North Carolina); C.L.U., American College of Life Underwriters; C.P.C.U., American Institute for Property and Liability Underwriters, Inc.
- HARTWIG, CHESTER W. *Professor of Economics and Business Administration, 1951, 1961*  
B.S., M.A., Ph.D., University of Wisconsin.
- \*HARTWIG, MARGARET PARMENTIER *Instructor in Mathematics, 1960, 1963*  
B.A., University of Wisconsin.
- HARWELL, KENNETH EDWIN *Associate Professor of Aerospace Engineering, 1963*  
B.S., University of Alabama; M.S., Ph.D., California Institute of Technology.
- HAYGOOD, SUE HENTON *Instructor in Economics and Business Administration, 1963*  
B.S., University of Alabama; M.B.A., Auburn University.
- HAYLEY, LEE R. *Assistant Football Coach, 1963*  
B.S., M.S., Auburn University.
- \*HAYNES, JERRY O. *Assistant Professor of Psychology, 1957, 1963*  
B.S., M.S., Auburn University; Ph.D., Florida State University.
- HAYNES, LUTHER J. *Head Professor of Industrial Laboratories, 1945, 1962*  
B.S., M.S., Auburn University; Ed.D., Bradley University.
- HAYNESWORTH, EMILIE VIRGINIA *Associate Professor of Mathematics, 1960*  
A.B., Coker College; M.A., Columbia University; Ph.D., University of North Carolina.
- HAYS, KIRBY LEE *Associate Professor of Zoology-Entomology, 1957, 1960*  
B.S., M.S., Auburn University; Ph.D., University of Michigan.
- \*HAYS, SIDNEY BROOKS *Assistant Professor of Zoology-Entomology, 1958, 1963*  
B.S., M.S., Auburn University; Ph.D., Clemson College.
- HAZARD, GILBERT C. *Assistant Professor of Naval Science, 1962*  
B.S., Villanova University; Major, U.S. Marine Corps.
- HEATH, MCKENZIE *Professor of Small Animal Surgery and Medicine, 1952, 1955*  
D.V.M., Auburn University.
- HELACHE, HENRY C. *Assistant Professor of Foreign Languages, 1959, 1963*  
B.A., M.A., Duke University.
- HENDRICK, JAMES G. *Assistant Professor of Agricultural Engineering, 1962*  
B.S.A.E., M.S.A.E., Auburn University; Ph.D., Michigan State University.
- HENDRICKS, THOMAS EARLE *Assistant Professor of Military Science, 1962*  
B.S., Clemson College; Captain, USA.
- HENKIN, ALAN B. *Instructor in Foreign Languages, 1963*  
B.S., M.S., University of Alabama.
- HENRY, JOHN FREDERICK *Assistant Professor of Industrial Engineering, 1957*  
B.I.M., Auburn University; M.S.I.M., Georgia Institute of Technology.
- HERNDON, FRANK M. *Professor of Education, 1962*  
A.B., Bowling Green College of Commerce; M.B.A., University of Mississippi; Ed.D., Northwestern University.
- HERRING, HAL M. *Assistant Football Coach, 1953*  
B.S., M.S., Auburn University.
- HERRON, ARTHUR M. *Associate Professor of Textile Technology, 1961*  
B.S.T.E., M.S.T.E., Georgia Institute of Technology.
- HILL, A. J. *Associate Professor of Economics and Business Administration, 1948, 1952*  
B.S., Auburn University; M.B.A., Northwestern University.
- HILTBOLD, ARTHUR EDWARD *Associate Professor of Agronomy and Soils, 1955, 1959*  
B.S., Cornell University; M.S., Iowa State University; Ph.D., Cornell University.
- HINTON, MARJORIE J. *Instructor in Home Economics, 1963*  
B.S., University of Alabama; M.S., Auburn University.
- HINTON, WILBUR *Professor, Band Director, Music, 1956, 1963*  
B.M., M.A., Ed.D., University of Alabama.
- HIRTH, LEO J. *Associate Professor of Chemical Engineering, 1962*  
B.S., College of City of New York; M.S., Ph.D., University of Texas.
- HOCKING, GEORGE M. *Professor of Pharmacy, 1951*  
B.S.P., University of Washington; M.S.P., Ph.D., University of Florida.



- HODGKINS, EARL J. *Professor of Forestry*, 1952, 1957  
B.S., Michigan State University; M.S., University of California; Ph.D., Michigan State University.
- HOEFFNER, THEODORE C. *Professor of English*, 1941, 1962  
B.S., Memphis State University; M.A., Vanderbilt University.
- HOERLEIN, BENJAMIN F. *Head Professor of Small Animal Surgery*, 1947, 1958  
D.V.M., Colorado State University; Ph.D., Cornell University.
- HOFF, EDWIN J. *Acting Head of Department and Associate Professor of Pathology and Parasitology*, 1962, 1963  
D.V.M., Cornell University; M.S., University of Pennsylvania.
- HOFFMAN, MARTHA B. *Instructor in Foreign Languages*, 1963  
B.S., Auburn University; M.A., University of Alabama.
- HOLLAWAY, OTTO *Professor of Education*, 1945, 1953  
B.S., M.S., Auburn University; Ed.D., Teachers College, Columbia University.
- HOLLOWAY, CLARKE L. *Assistant Professor of Anatomy and Histology*, 1960, 1963  
D.V.M., M.S., Auburn University.
- HOLMES, CHARLES H. *Associate Professor of Electrical Engineering*, 1957, 1962  
B.E.E., Auburn University; M.E.E., Brooklyn Polytechnic Institute; Ph.D., Stanford University.
- HONNELL, MARTIAL ALFRED *Professor of Electrical Engineering (E.E., P.E.)*, 1958  
B.S.E.E., M.S.E.E., Georgia Institute of Technology.
- HOOD, JOSEPH T. *Professor of Agronomy and Soils*, 1949, 1959  
B.S., University of Georgia; M.S., Purdue University; Ph.D., Cornell University.
- HORNE, ROBERT D. *Associate Professor of Small Animal Surgery and Medicine*, 1959, 1963  
D.V.M., M.S., Auburn University.
- HORTON, DAN H. *Assistant Professor of Military Science*, 1962  
B.S., Clemson College; M.S., University of Tennessee; Lieut. Col., USA.
- HOVELAND, CARL S. *Associate Professor of Agronomy and Soils*, 1959  
B.S., M.S., University of Wisconsin; Ph.D., University of Florida.
- HOWES, JAMES R. *Associate Professor of Poultry Science*, 1960, 1963  
B.S.C., University of London; N.D.A., University of Edinburgh; M.S.C., McGill University, Montreal.
- Hsu, CHENG-TEH *Professor of Chemical Engineering*, 1953, 1962  
B.S.C., University of Nanking; M.S., University of Wisconsin; Ph.D., University of Pennsylvania.
- \*HU, STEVE SENG-CHIU *Professor of Aerospace Engineering*, 1963  
B.S.M.E., Chiao-Tung University; M.S.A.E., Rensselaer Polytechnic Institute; Sc.D. in Aerospace Engineering, Massachusetts Institute of Technology.
- HUDSON, FRED M. *Professor of Civil Engineering (P.E.)*, 1947, 1961  
B.S.C.E., Purdue University; M.S., Princeton University.
- HUDSON, SARA CARRUTH *Assistant Professor of English*, 1952, 1958  
A.B., University of North Carolina; M.A., Ph.D., University of Chicago.
- HUFFMAN, DALE L. *Assistant Professor of Animal Science*, 1963  
B.S., Cornell University; M.S., Ph.D., University of Florida.
- HUGHES, GORDON *Professor of Physics*, 1933, 1946  
B.A., Oberlin College; M.A., Ph.D., University of Illinois.
- HUTCHINSON, EDWARD C. *Associate Professor of Speech*, 1963  
B.A., Hiram College; M.A., Kent State University; Ph.D., Ohio State University.
- \*HUTCHINSON, MARTHA A. *Science Librarian and Instructor*, 1963  
A.B., University of Tennessee.
- HYCHE, LACY LEONARD *Associate Professor of Zoology-Entomology*, 1952, 1960  
B.S., M.S., Auburn University.
- IKENBERRY, ERNEST *Research Professor of Mathematics*, 1950, 1956  
A.B., Ottawa University; M.A., University of Kansas; Ph.D., Louisiana State University.
- IKENBERRY, JANICE T. *Assistant Professor of Foreign Languages*, 1945  
A.B., Randolph-Macon Woman's College; M.A., University of Alabama; Diplomas from University of Poitiers, University of Paris, and University of Geneva.
- INGRAM, FORNEY H. *Associate Professor of Engineering Graphics (P.E.)*, 1927, 1963  
B.S.C.E., M.C.E., Auburn University.
- \*INGRAM, SAM H. *Professor of Education*, 1963  
B.S., Bethel College; M.A., Memphis State University; Ed.D., University of Tennessee. (Resigned 8-31-63)



- IVEY, OLIVER T. \_\_\_\_\_ *Professor of History and Political Science*, 1928, 1963  
B.S., M.S., Auburn University; M.A., University of Chicago.
- IVEY, WILLIAM D. \_\_\_\_\_ *Associate Professor of Zoology-Entomology*, 1947, 1961  
B.S., M.S., Auburn University; Ph.D., Emory University.
- JACKSON, BYRON K. \_\_\_\_\_ *Assistant Professor of English*, 1960  
B.S., Butler University; M.A., University of Miami.
- JACKSON, ELINOR \_\_\_\_\_ *Instructor in Health, Physical Education and Recreation*, 1958  
B.A., Georgia State College for Women; M.S., Florida State University.
- \*JACKSON, MARGARET ELLEN \_\_\_\_\_ *Instructor in Chemistry*, 1956, 1962  
B.S., Muskingum College.
- JAMES, CHARLES W. \_\_\_\_\_ *Assistant Professor of Anatomy and Histology*, 1957, 1960  
D.V.M., M.S., Auburn University.
- JEFF, JOHN L. \_\_\_\_\_ *Assistant Professor of Air Science*, 1961  
B.A., Birmingham-Southern College; Major, USAF.
- JEMIAN, WARTAN A. \_\_\_\_\_ *Associate Professor of Mechanical Engineering (P.E.)*, 1962  
B.S.Ch., University of Maryland; M.S., Ph.D., Metallurgical Engineering, Rensselaer Polytechnic Institute.
- JOHNS, ROBERT N. \_\_\_\_\_ *Assistant Professor of Military Science*, 1963  
B.S., U.S. Military Academy; Captain, USA.
- JOHNSON, A. G. W. \_\_\_\_\_ *Commandant and Professor of Military Science*, 1962  
B.S., U.S. Military Academy; M.B.A., Syracuse University.
- JOHNSON, ALBERT SYDNEY, III \_\_\_\_\_ *Instructor in Zoology-Entomology*, 1963  
B.S., University of Georgia; M.S., Auburn University.
- JOHNSON, EVERT W. \_\_\_\_\_ *Associate Professor of Forestry*, 1950, 1957  
B.S., University of New Hampshire; M.F., Yale University; Ph.D., Syracuse University.
- JOHNSON, GERALD DAVID \_\_\_\_\_ *Instructor in English*, 1963  
B.A., Auburn University; M.A., University of Virginia.
- JOHNSON, JACK L. \_\_\_\_\_ *Instructor in Engineering Graphics*, 1959  
B.I.M., Auburn University.
- JOHNSON, LEWIS WARREN \_\_\_\_\_ *Associate Professor of Poultry Science*, 1948, 1955  
A.B., Cornell University; M.S., Auburn University; Ph.D., Texas A. & M. College.
- JOHNSON, RONALD E. \_\_\_\_\_ *Assistant Professor of Psychology*, 1960  
B.A., Ph.D., Ohio State University.
- JOHNSON, SIDNEY W. \_\_\_\_\_ *Associate Professor of History and Political Science*, 1925, 1941  
B.S., M.S., Auburn University.
- JOHNSON, WILEY C., JR. \_\_\_\_\_ *Associate Professor of Agronomy and Soils*, 1957  
B.S., Wake Forest College; B.S., M.S., North Carolina State College; Ph.D., Cornell University.
- JONES, EDWARD OSCAR, JR. \_\_\_\_\_ *Professor of Mechanical Engineering (P.E.)*, 1946, 1961  
B.M.E., B.E.E., Auburn University; M.S., University of Illinois.
- \*JONES, ELMER A. \_\_\_\_\_ *Associate Professor of Zoology-Entomology*, 1937, 1963  
B.S., M.S., Auburn University. (Resigned 8-31-63)
- \*JONES, JEANETTE H. \_\_\_\_\_ *Instructor in English*, 1961, 1963  
B.S., Auburn University.
- JONES, MADISON P., JR. \_\_\_\_\_ *Associate Professor of English*, 1956, 1963  
A.B., Vanderbilt University; M.A., University of Florida.
- \*JONES, REX CHANDLER \_\_\_\_\_ *Instructor in Mathematics*, 1961, 1963  
B.S., Troy State College; M.S., Auburn University.
- JONES, SAM T. \_\_\_\_\_ *Associate Professor of Horticulture*, 1950, 1954  
B.S., M.S., Auburn University; Ph.D., Louisiana State University.
- JORDAN, J. RALPH \_\_\_\_\_ *Head Football Coach and Assistant Director of Athletics*, 1932, 1951  
B.S., Auburn University.
- JUSTICE, ERNEST \_\_\_\_\_ *Associate Professor of Secondary Education*, 1960, 1963  
B.M.E., Kansas State Teachers College; M.S., Ph.D., University of Wisconsin.
- \*JUSTICE, MARY ELIZABETH \_\_\_\_\_ *Instructor in Secondary Education*, 1960  
B.M.E., Kansas State Teachers College.
- KELLEY, ROGER LEE \_\_\_\_\_ *Assistant Professor of Psychology*, 1960  
A.B., University of Chicago.

\* Temporary.

- \*KEMPER, W. D. \_\_\_\_\_ *Professor of Agronomy and Soils*, 1963  
B.S., Brigham Young University; M.S., Ph.D., North Carolina State College. (Resigned effective 4-30-63)
- \*\*KENDRICK, JACK E. \_\_\_\_\_ *Associate Professor of History and Political Science*, 1939, 1946  
A.B., University of North Carolina; M.A., Emory University; Ph.D., University of North Carolina.
- KEHN, EDWARD E., JR. \_\_\_\_\_ *Associate Professor of Agricultural Economics*, 1955  
B.S., M.S., Louisiana State University.
- \*KETTUNEN, MARIETTA \_\_\_\_\_ *Associate Professor of Art*, 1954, 1957  
B.A.E., Art Institute of Chicago; Studied Parsons, New York Art Students League, New York School of Fine and Applied Arts.
- KINARD, BILLY R. \_\_\_\_\_ *Assistant Football Coach*, 1961  
B.S., University of Mississippi.
- KINCEY, TRULY ELIZABETH \_\_\_\_\_ *Associate Professor of Economics and Business Administration*, 1957, 1960  
A.B., Alabama College; M.A., Tulane University; Ph.D., Ohio State University.
- KINNAIRD, RICHARD W. \_\_\_\_\_ *Instructor in Art*, 1960  
B.F.A., Carlton College; M.F.A., University of Illinois.
- KLEPINGER, WALTER J. \_\_\_\_\_ *Assistant Professor of Engineering Graphics*, 1934, 1956  
B.M.E., Ohio State University.
- KLONTZ, HAROLD E. \_\_\_\_\_ *Professor of Economics and Business Administration*, 1946, 1950  
A.B., Berea College; Ph.D., University of North Carolina.
- KNAPP, WILLIAM C. \_\_\_\_\_ *Assistant Professor of Air Science*, 1963  
B.S., Auburn University; Major, USAF.
- KNIGHT, WILLIAM C. \_\_\_\_\_ *Professor of Textile Technology*, 1946, 1961  
B.T.E., Auburn University; M.S.T.E., Georgia Institute of Technology.
- KNOWLES, ROBERT \_\_\_\_\_ *Associate Professor of Drama*, 1951, 1962  
B.A., Stetson University; M.A., University of Florida.
- KOSOLAPOFF, GENNADY M. \_\_\_\_\_ *Research Professor of Chemistry*, 1948, 1953  
B.S., Ch.E., Cooper Union; M.S., Sc.D., Michigan State University.
- KRIDS, ANNA E. \_\_\_\_\_ *Social Science Bibliographer and Instructor (Library)*, 1961, 1962  
A.B., Louisiana Polytechnic Institute; M.S.L.S., Louisiana State University.
- KUMMER, FRED A. \_\_\_\_\_ *Head of Department, Agricultural Engineering (P.E.)*, 1935, 1948  
B.S.M.E., M.S., Auburn University.
- LAMAR, MARY GEORGE \_\_\_\_\_ *Associate Professor of Economics and Business Administration*, 1933, 1963  
B.S., Auburn University; M.A., New York University.
- LAND, JAMES EDWARD \_\_\_\_\_ *Professor of Chemistry*, 1938, 1955  
B.S., Clemson College; M.S., Tulane University; Ph.D., University of North Carolina.
- LAND, JEANNETTA T. \_\_\_\_\_ *Professor of Health, Physical Education and Recreation*, 1941, 1943  
B.S., University of Alabama; M.A., Teachers College, Columbia University.
- LANHAM, BEN T., JR. \_\_\_\_\_ *Head of Department, Agricultural Economics*, 1939, 1956  
B.S., Clemson College; M.S., University of Tennessee; Ph.D., Michigan State University.
- LAPP, VERNON W. \_\_\_\_\_ *Professor of Health, Physical Education and Recreation*, 1940, 1944  
B.S., M.A., Ph.D., University of Iowa.
- LARD, LONNIE D. \_\_\_\_\_ *Instructor in Economics and Business Administration*, 1963  
B.S., M.S., University of Southern Mississippi.
- LARSEN, HARRY S. \_\_\_\_\_ *Assistant Professor of Forestry*, 1959  
B.S., Rutgers University; M.S., Michigan State University; Ph.D., Duke University.
- LATIMER, PAUL H. \_\_\_\_\_ *Associate Professor of Physics*, 1962  
B.S., Northwestern University; M.S., Ph.D., University of Illinois.
- LAWLER, JOYCE \_\_\_\_\_ *Assistant Professor of Health, Physical Education and Recreation*, 1955, 1958  
A.B., Bessie Tift College; M.A., Peabody College.
- \*LAWRENCE, FAYE BUTTRAM \_\_\_\_\_ *Assistant Professor of Zoology-Entomology*, 1946, 1959  
B.A., Huntingdon College; M.S., Auburn University.

\* Temporary.

\*\* On leave.

- LAWSON, SAMMY. \_\_\_\_\_ *Instructor in English*, 1959, 1961  
B.A., Huntingdon; M.A., Auburn University.
- LAWSON, STANTON C. D. \_\_\_\_\_ *Professor of Mechanical Engineering (P.E.)*, 1958, 1963  
B.S.Sc., University of Toronto; M.S., University of Michigan.
- LAYFIELD, CLAUDE B. \_\_\_\_\_ *Associate Professor of Industrial Engineering (P.E.)*, 1947, 1958  
B.A.A., B.I.M., Auburn University; M.S., Georgia Institute of Technology.
- \*LAYFIELD, MARY A. \_\_\_\_\_ *Associate Professor of Home Economics*, 1953, 1963  
B.S., M.S., M.S.Ed., Ed.D., Auburn University.
- LEFFARD, WARREN L. \_\_\_\_\_ *Associate Professor of Industrial Laboratories*, 1956, 1963  
B.S., M.Ed., Auburn University.
- LEVINE, RICHARD STEVEN \_\_\_\_\_ *Assistant Professor of Architecture*, 1963  
B.S.Arch., Rhode Island School of Design; M.Arch., Rensselaer Polytechnic Institute.
- LITTLE, ALTON S. \_\_\_\_\_ *Associate Professor of Engineering Graphics (P.E.)*, 1947, 1955  
B.C.E., Auburn University; M.S.C.E., Georgia Institute of Technology.
- LITTLETON, ROBERT EDWARD \_\_\_\_\_ *Instructor in Electrical Engineering*, 1960  
B.S.Ch., Berry College; B.S.Ch.E., M.S.Ch.E., Auburn University.
- LITTLETON, TAYLOR D. \_\_\_\_\_ *Associate Professor of English*, 1957, 1963  
B.S., M.A., Ph.D., University of Florida.
- \*LIVERMAN, JOHN H. \_\_\_\_\_ *Head Professor of Music*, 1945, 1954  
B.S., M.A., Columbia University.
- LORENDO, EUGENE L. \_\_\_\_\_ *Assistant Football Coach*, 1951  
B.S., University of Georgia.
- \*LORENDO, JANE C. \_\_\_\_\_ *Instructor in Home Economics*, 1956, 1958  
B.S., University of Minnesota; M.S., Auburn University.
- LOVELL, JOHN T. \_\_\_\_\_ *Professor of Agricultural Education*, 1956, 1964  
B.A., M.A., Peabody College; D.Ed., University of Florida.
- LOWRY, JAMES L. \_\_\_\_\_ *Associate Professor of Electrical Engineering*, 1955, 1963  
B.E.E., M.E.E., Auburn University; Ph.D., University of Florida.
- \*LUNCEFORD, BILLY EUGENE \_\_\_\_\_ *Professor of Educational Administration*, 1963  
A.B., Howard College; B.D., Th.M., Southern Baptist Theological Seminary; M.A., Middle Tennessee State College; Ed.D., Auburn University. (Resigned effective 7-15-63)
- LURIE, GAYLE W. \_\_\_\_\_ *Instructor in Health, Physical Education and Recreation*, 1961  
B.S., Huntingdon College; M.Ed., Auburn University.
- LYLE, JAMES A. \_\_\_\_\_ *Head of Department, Botany and Plant Pathology*, 1947, 1954  
B.S., University of Kentucky; M.S., North Carolina State College; Ph.D., University of Minnesota.
- LYNN, WILLIAM J. \_\_\_\_\_ *Head Basketball Coach*, 1951, 1963  
B.S., Auburn University.
- MACON, NATHANIEL \_\_\_\_\_ *Professor of Mathematics and Director of Computer Center*, 1951, 1957  
B.A., M.A., Ph.D., University of North Carolina.
- \*MAJOR, PAUL EARLE \_\_\_\_\_ *Instructor in Mathematics*, 1958, 1963  
B.S., M.S., Auburn University.
- MARSHALL, NORTON LITTLE \_\_\_\_\_ *Associate Professor of Botany and Plant Pathology*, 1958, 1961  
B.S., Pennsylvania State University; M.S., Ph.D., University of Maryland.
- MARTIN, FRED WILLIAM \_\_\_\_\_ *Professor of Aerospace Engineering (P.E.)*, 1956  
B.S.A.E., M.S., Virginia Polytechnic Institute.
- MARTIN, LEWIS C., JR. \_\_\_\_\_ *Assistant in Electrical Engineering*, 1962  
B.E.E., Auburn University.
- MARTIN, WILLIS C., JR. \_\_\_\_\_ *Instructor in Horticulture*, 1951, 1958  
B.S., Auburn University.
- MARTINCIC, ALBERT FRANK \_\_\_\_\_ *Assistant Professor of Health, Physical Education and Recreation*, 1948, 1953  
B.S., M.A., University of Iowa.
- MARTY, EDWARD C. \_\_\_\_\_ *Professor of Building Technology*, 1939, 1957  
B.Arch., M.Arch., Auburn University.
- MATTOX, PAUL R. \_\_\_\_\_ *Instructor in Speech*, 1961  
B.A., Los Angeles State College; M.A., University of Iowa.

\* Temporary.

\*\* On leave.

- MAYNOR, HAL WHARTON, JR. — *Professor of Mechanical Engineering (P.E.)*, 1959  
B.S., M.S., D. of Eng., University of Kentucky.
- MCCAIN, F. S. — *Professor of Agronomy and Soils*, 1946, 1959  
B.S., M.S., Auburn University; Ph.D., Purdue University.
- MCCANN, FRANKLIN T. — *Professor of English*, 1947, 1953  
A.B., Denison University; M.A., Harvard University; M.A., Ph.D., Columbia University.
- MCCLEUNG, JAMES D. — *Associate Professor of Engineering Graphics*, 1941, 1946  
B.S., Ed.M., University of Oklahoma.
- MCDANIEL, WILLIE LEE, JR. — *Instructor in Electrical Engineering (P.E.)*, 1963  
B.S.E., Auburn University; M.S.E.E., Mississippi State University.
- MCGOWEN, NEIL E. — *Assistant Football Coach*, 1948  
B.S., Auburn University.
- MCINTYRE, SHERWOOD C. — *Professor of Psychology*, 1948  
B.A., B.Sc., M.A., Ph.D., Ohio State University.
- MCKAY, JOE M. — *Instructor in Electrical Engineering*, 1957  
B.S.Ch., Auburn University.
- MCKOWN, DELOS BANNING — *Assistant Professor of Philosophy*, 1962  
B.A., Alma College; B.D., College of the Bible (Kentucky); M.A., University of Kentucky; Diploma, University of Geneva (Switzerland).
- MCLEDD, FRANCES R. — *Assistant Professor of English*, 1945, 1955  
A.B., Huntingdon College; M.S., Auburn University.
- MCMILLAN, MALCOLM COOK — *Research Professor of History and Political Science*, 1948, 1952  
A.B., M.A., University of Alabama; Ph.D., University of North Carolina.
- MCINN, WILLIAM G. — *Professor and Assistant to the Dean, Architecture*, 1963  
B.A., B.S.Arch., Rice University; M.Arch., University of Texas.
- McMURTRY, THOMAS EDWARD — *Assistant Professor in Industrial Laboratories*, 1959, 1963  
B.S., M.Ed., Auburn University.
- McNORTON, CLAUDE — *Assistant Professor of History and Political Science*, 1946, 1949  
A.B., University of Alabama; M.S., Louisiana State University; M.A., New York University.
- McPHERSON, BYRON WAYNE — *Assistant in Electrical Engineering*, 1962  
B.S.E.E., Auburn University.
- MECHAM, JOHN STEPHEN — *Associate Professor of Zoology-Entomology*, 1956, 1961  
B.A., University of Texas; M.S., University of Florida; Ph.D., University of Texas.
- MELIUS, PAUL — *Associate Professor of Chemistry*, 1957  
B.S., Bradley University; M.S., University of Chicago; Ph.D., Loyola University of Chicago.
- \*MELZER, DOROTHY GARRETT — *Assistant Professor of English*, 1958  
A.M., Ph.B., University of Chicago.
- MELZER, JOHN HENRY — *Professor of Philosophy*, 1958  
A.M., Ph.D., Vanderbilt University.
- MEIZ, GENE ALAN — *Associate Professor of Civil Engineering*, 1960, 1963  
B.S.C.E., M.S.C.E., University of Missouri; Ph.D., Washington University.
- METZGER, ABRAM B. — *Assistant Professor of History and Political Science*, 1937, 1947  
B.B.A., University of Chattanooga; M.S., Auburn University.
- MILES, LOUISE W. — *Professor of Secondary Education*, 1962, 1963  
B.S., Jacksonville State College (Ala.); M.A., Peabody College. (Resigned effective 8-31-63)
- MILLARD, DAVID ARTHUR — *Assistant Professor of Architecture*, 1963  
B.A., Manchester University (England); M.S.C., Columbia University.
- MILLER, BILL R. — *Assistant Professor of Agricultural Economics*, 1963  
B.S., M.S., Auburn University; Ph.D., North Carolina State College.
- MILLER, GEORGE NELSON — *Assistant in Electrical Engineering*, 1962  
B.S.E.E., Auburn University.
- MILLER, HAMPTON KNOX — *Assistant Professor of Electrical Engineering (P.E.)*, 1938, 1946  
B.S.E.E., Auburn University.
- \*MILLER, MABREY LEE — *Professor of Educational Administration*, 1963  
B.A., Harding College; M.A., Peabody College; Ed.D., University of Nebraska. (Resigned effective 8-31-63)

\* Temporary.

- MILLER, WILLIAM R. \_\_\_\_\_ Assistant Professor of Bacteriology, 1960, 1963  
D.V.M., M.S., Auburn University.
- MILICAN, ALTA LUCILLE \_\_\_\_\_ Assistant Professor of Education, 1958, 1961  
B.S., Jacksonville State College; M.A., University of Alabama; M.S., Florida State University; Ed.D., Auburn University.
- MIN, TONY C. \_\_\_\_\_ Associate Professor of Mechanical Engineering (P.E.), 1957  
B.S.A.E., Chiao Tung University; M.S.M.E., University of Tennessee.
- \*MITCHELL, DOROTHY N. \_\_\_\_\_ Instructor in Art, 1961  
B.A., Auburn University.
- \*MITCHELL, EILEEN \_\_\_\_\_ Instructor in English, 1960, 1963  
A.B., Berry College.
- MONEY, JAMES E. \_\_\_\_\_ Assistant Professor of Air Science, 1963  
B.S., Auburn University; Captain, USAF.
- MONTGOMERY, R. W. \_\_\_\_\_ Head Professor of Agricultural Education, 1940, 1952  
B.S., M.S., Auburn University; Ph.D., Ohio State University.
- MOON, WILLIAM HAROLD \_\_\_\_\_ Assistant Professor of Psychology, 1956, 1964  
B.S., Auburn University; Ph.D., Florida State University.
- MOORE, CLAUDE H. \_\_\_\_\_ Head of Department, Poultry Science, 1956, 1959  
B.S., Auburn University; M.S., Kansas State University; Ph.D., Purdue University.
- MOORE, JOHN R. \_\_\_\_\_ Professor of English, 1932, 1960  
A.B., Tulane University; A.M., Ph.D., Harvard University.
- MOORE, JOSEPH C. \_\_\_\_\_ Assistant Professor of Horticulture, 1938, 1947  
B.S., Auburn University; M.S., Washington University.
- \*MOORE, MARY VIRGINIA \_\_\_\_\_ Assistant Professor of Speech, 1956, 1964  
A.B., Valdosta State College; M.S., Purdue University.
- MOORE, OMAR C. \_\_\_\_\_ Associate Professor of Chemical Engineering, 1931, 1953  
B.S., M.S., Auburn University.
- MORA, E. C. \_\_\_\_\_ Associate Professor of Poultry Science, 1958, 1961  
B.S., University of New Mexico; M.S., New Mexico State University; Ph.D., Kansas State College.
- MORGAN, WILLIAM W. \_\_\_\_\_ Assistant Professor of Industrial Engineering (P.E.), 1954  
B.B.A., University of Georgia; M.S.I.M., Georgia Institute of Technology.
- \*MORRILL, OLIVE L. \_\_\_\_\_ Assistant Professor of Home Economics, 1960  
B.S., Utah State University; M.S., Cornell University.
- MORTON, SUE BRAKEBILL \_\_\_\_\_ Assistant Professor of Home Economics, 1962  
B.S., M.S., Ph.D., Texas Woman's University.
- MOSS, J. HERBERT, JR. \_\_\_\_\_ Assistant Professor of Mathematics, 1948  
A.B., William and Mary College; M.S., New York University.
- \*MOTSINGER, RALPH E. \_\_\_\_\_ Instructor in Botany and Plant Pathology, 1964  
B.S., North Carolina State College; M.S., University of Maryland.
- MULKERN, KEVIN M. \_\_\_\_\_ Assistant Professor of Naval Science, 1963  
B.S., U.S. Naval Academy; Lieutenant, USN.
- MYLES, WILLIAM R. \_\_\_\_\_ Associate Professor of Economics and  
B.S., M.A., University of Pittsburgh. Business Administration, 1949, 1957
- NASH, MARY ANN \_\_\_\_\_ Instructor in Health, Physical Education and  
B.S., Alabama College. Recreation, 1963
- \*\*NAYLOR, ROBERT ARTHUR \_\_\_\_\_ Associate Professor of History and  
Political Science, 1956, 1963  
B.A., M.A., University of Western Ontario; Ph.D., Tulane University.
- NEAL, JAMES E. \_\_\_\_\_ Head Professor of Bacteriology, 1951, 1959  
B.S., Mississippi State University; D.V.M., Auburn University; M.S., Texas A. & M. College.
- NEAL, JESSE HAROLD \_\_\_\_\_ Professor of Agricultural Engineering (P.E.), 1939, 1948  
B.S., Kansas State University; M.S., University of Minnesota; Ph.D., University of Missouri.
- NEWELL, ANNIE LAURA \_\_\_\_\_ Assistant Professor of Education, 1958, 1960  
A.B., LaGrange College; M.S., Ed.D., Auburn University.
- \*NEWMAN, MARY EMMA M. \_\_\_\_\_ Instructor in Mathematics, 1942  
B.S., M.S., Auburn University.

\* Temporary.

\*\* On leave.

- NICHOLS, GROVER T. *Associate Professor of Electrical Engineering (P.E.)*, 1947, 1950  
B.E.E., Auburn University; M.S., Georgia Institute of Technology.
- \*\*NICHOLS, JAMES O. *Assistant Professor of Aerospace Engineering (P.E.)*, 1960  
B.S.A.E., M.S.E., University of Alabama.
- NICHOLS, MARK L. *Research Lecturer, Agricultural Engineering*, 1917, 1957  
B.S., Ohio State University; M.S., University of Delaware; D.Sc., Clemson College.
- NICHOLS, SAMUEL HARDING, JR. *Professor of Chemistry*, 1944, 1955  
B.S., M.S., Ph.D., Ohio State University.
- \*NIX, PAUL E. *Instructor and Head Baseball Coach*, 1963, 1964  
B.S., Troy State College; M.Ed., Auburn University.
- \*NIXON, LOCHRAN CONNER, JR. *Instructor in Education*, 1957, 1962  
B.S., Troy State College; M.Ed., Auburn University.
- NORTON, JOSEPH D. *Assistant Professor of Horticulture*, 1954, 1960  
B.S., M.S., Auburn University; Ph.D., Louisiana State University.
- OLIVER, JOHN EOFF, JR. *Research Assistant in Small Animal Surgery and Medicine*, 1963  
D.V.M., Texas A. & M. College.
- ORR, FRANK MARION *Head Professor of Building Technology*, 1928, 1957  
B.S., M.Arch., Auburn University.
- ORR, HENRY P. *Professor of Horticulture*, 1947, 1962  
B.S., Auburn University; M.S., Ph.D., Ohio State University.
- ORR, WALTON A. *Instructor in Mechanical Engineering*, 1961  
B.M.E., Auburn University; M.S.M.E., Auburn University.
- \*ORR, WILLIAM HAROLD *Instructor in Physics*, 1962  
B.A.Sc., University of Toronto.
- \*OTTIS, CHARLOTTE *Instructor in Education*, 1959  
A.B., Dakota Wesleyan University; M.A., University of Wisconsin.
- OTTIS, KENNETH *Professor of Zoology-Entomology*, 1953, 1963  
B.S., Dakota Wesleyan University; M.S., Ph.D., Iowa State University.
- OWSLEY, FRANK L., JR. *Assistant Professor of History and Political Science*, 1960  
A.B., Vanderbilt University; M.A., Ph.D., University of Alabama.
- PARKER, WILLIAM VANN *Dean of Graduate School, Head Professor of Mathematics*, 1950, 1953  
A.B., M.A., University of North Carolina; Ph.D., Brown University.
- PARTENHEIMER, EARL J. *Associate Professor of Agricultural Economics*, 1958, 1961  
B.S., M.S., Purdue University; Ph.D., Michigan State University.
- PARTIN, ROBERT L. *Professor of History and Political Science*, 1937, 1947  
B.S., Middle Tennessee State College; M.A., Ph.D., Peabody College.
- PATRICK, KEITH HILTON *Associate Professor of Agronomy and Soils*, 1954  
B.S., M.S., Oklahoma State University; Ph.D., Texas A. & M. College.
- PATRICK, WALTON R. *Head Professor of English*, 1946, 1947  
B.S., Mississippi State University; M.A., Ph.D., Louisiana State University.
- \*PATTERSON, ADELAIDE HOLLOWAY *Instructor in English*, 1961, 1963  
A.B., Westhampton College, University of Richmond.
- PATTERSON, RICHARD MCCARTHY *Associate Professor of Agronomy and Soils*, 1949, 1956  
B.S., M.S., University of Florida; Ph.D., Pennsylvania State University.
- PATTERSON, TROY B., JR. *Associate Professor of Animal Science*, 1957  
B.S., Mississippi State University; M.S., Ph.D., Texas A. & M. College.
- PATTON, GEORGE W. *Associate Professor of Economics and Business Administration*, 1943  
A.Ph., Emory University; M.A., University of Kentucky.
- PEARSON, ALLEN M. *Professor of Zoology-Entomology*, 1937, 1957  
B.S., Auburn University; M.S., Ph.D., Iowa State University.
- PEARSON, ROBERT WATTS *Research Lecturer in Agronomy and Soils*, 1941, 1960  
B.S., M.S., Mississippi State University; Ph.D., University of Wisconsin.
- PEET, HELEN HANNA *Humanities Bibliographer and Instructor (Library)*, 1937, 1959  
A.B., Mississippi State College for Women; M.A., Tulane University.

\* Temporary.

\*\* On leave.



- PEET, TELFAIR B. \_\_\_\_\_ *Head Professor of Drama*, 1931, 1957  
A.B., Columbia University; M.A., University of North Carolina.
- PERRY, NORMAN C. \_\_\_\_\_ *Professor of Mathematics*, 1953, 1961  
A.B., University of California; M.A., Ph.D., University of Southern California.
- PERSONS, CAROLINE C. \_\_\_\_\_ *Science Bibliographer and Instructor, (Library)*, 1963  
A.B., Mississippi State College for Women; B.S.L.S., Peabody College.
- PETERSON, CHARLES H. \_\_\_\_\_ *Assistant Professor of Civil Engineering (P.E.)*, 1962  
B.C.E., M.C.E., Auburn University.
- PETERSON, JOE G. \_\_\_\_\_ *Associate Professor of Chemistry*, 1948, 1959  
B.S., M.S., Auburn University.
- PFEIL, EVA \_\_\_\_\_ *Assistant Professor of Architecture*, 1961, 1963  
Certificate Diploma, Ulm School of Design.
- PHILLIPS, JOE \_\_\_\_\_ *Assistant Professor of Textile Technology*, 1959, 1960  
B.S.T.E., Auburn University.
- \*PHILLIPS, PHYLLIS P. \_\_\_\_\_ *Instructor in Speech*, 1963  
B.S., M.Ed., Auburn University.
- PHILLIPS, RAY C. \_\_\_\_\_ *Assistant Professor of Education and Director of Student Teaching*, 1959, 1961  
B.S., Middle Tennessee State College; M.A., Peabody College; Ed.D., Auburn University.
- PIERCE, TRUMAN M. \_\_\_\_\_ *Dean, School of Education*, 1955  
Ph.B., Piedmont College; M.A., University of Alabama; Ph.D., Columbia University.
- PITTS, ROBERT GILES \_\_\_\_\_ *Head Professor of Aerospace Engineering (P.E.)*, 1935, 1944  
B.A.E., Auburn University; M.S., California Institute of Technology.
- PLAGIANIS, GUS S. \_\_\_\_\_ *Assistant Professor of Military Science*, 1963  
B.A., Furman University; Captain, USA.
- POLHEMUS, GEORGE W. \_\_\_\_\_ *Assistant Professor of English*, 1956, 1959  
B.A., M.A., University of Mississippi; M.A., Columbia University.
- POPOVICS, SANDOR \_\_\_\_\_ *Associate Professor of Civil Engineering (P.E.)*, 1959  
Diploma, Polytechnic University, Budapest; Candidate of Tech. Science, National Academy of Sciences, Budapest; Ph.D., Purdue University.
- PORTER, DALE A. \_\_\_\_\_ *Research Lecturer, Zoology-Entomology*, 1954  
A.B., Kalamazoo College; M.S., Kansas State University; Sc.D., Johns Hopkins University.
- POSEY, HENRY G. \_\_\_\_\_ *Associate Professor of Forestry*, 1950, 1959  
B.S.F., M.S.F., North Carolina State College.
- PRATHER, EDMUND E. \_\_\_\_\_ *Associate Professor of Zoology-Entomology*, 1941, 1950  
B.S., Auburn University; M.S., University of Michigan.
- PRATHER, MARY E. \_\_\_\_\_ *Associate Professor of Home Economics*, 1952, 1963  
B.S., M.S., Auburn University; Ph.D., Iowa State University.
- \*\*PRESTRIDGE, JAMES A. \_\_\_\_\_ *Associate Professor of Architecture*, 1947, 1954  
B.S.C.E., Mississippi State University; B.Arch., Auburn University; M.S.Arch., Columbia University.
- \*PRICE, ANN CANNON \_\_\_\_\_ *Instructor in Health, Physical Education and Recreation*, 1961  
B.S., Alabama College.
- PRICE, EDWIN O. \_\_\_\_\_ *Professor of Chemistry*, 1946, 1957  
A.B., University of Colorado; M.S., Ph.D., Ohio State University.
- PRICKETT, CAVETT O. \_\_\_\_\_ *Professor of Animal Science*, 1962  
B.S., University of New Hampshire.
- PRIEST, MELVILLE S. \_\_\_\_\_ *Head Professor of Civil Engineering (P.E.)*, 1955, 1958  
B.S., University of Missouri; M.S., University of Colorado; Ph.D., University of Michigan.
- PRUETT, HERMAN T. \_\_\_\_\_ *Associate Professor of Agricultural Education*, 1949, 1960  
B.S., M.S., Auburn University.
- PUMPHREY, FRED H. \_\_\_\_\_ *Dean of Engineering and Director of Engineering Experiment Station (P.E.)*, 1958  
B.A., B.E.E., E.E., D.Sc. (Hon.), Ohio State University.
- PUNKE, HAROLD H. \_\_\_\_\_ *Professor of Education*, 1949  
B.S., M.S., University of Illinois; Ph.D., University of Chicago.
- RAINER, REX K. \_\_\_\_\_ *Assistant Professor of Building Technology*, 1962  
B.C.E., M.C.E., Auburn University.

\* Temporary.

\*\* On leave.



- RANNEY, J. BUCKMINSTER. *Professor of Speech*, 1957, 1963  
B.A., M.A., New York University; Ph.D., Ohio State University.
- RASH, JOE M. *Associate Professor of Pharmacy*, 1948  
B.S., Carson-Newman College; B.S., M.S., Auburn University.
- \*RAUTENSTRAUCH, CARL PETER. *Instructor in Mathematics*, 1962  
B.S., University of Florida; M.A., University of Alabama.
- RAWLS, TANNYK B. *Instructor in Health, Physical Education and Recreation*, 1960  
A.A., Stephens College; B.S., University of Iowa; M.A.Ed., University of North Carolina.
- RAYNOR, OWEN N., III. *Assistant Professor of Philosophy*, 1963  
B.A., M.A., Ph.D., University of Virginia.
- \*\*REA, RICHARD G. *Instructor in Speech*, 1960  
B.S., Southwest Missouri State College; M.A., University of Arkansas.
- REA, ROBERT R. *Professor of History and Political Science*, 1950, 1961  
A.B., University of Friends; M.A., Ph.D., Indiana University.
- REACAN, HUGH D. *Associate Professor of History and Political Science*, 1948, 1963  
B.A., M.A., Emory University; Ph.D., University of Texas.
- REECE, JOE W. *Assistant Professor of Mechanical Engineering*, 1964  
B.N.E., M.S., North Carolina State College; Ph.D., University of Florida.
- REED, IRVIN F. *Research Lecturer, Agricultural Engineering (P.E.)*, 1957  
B.S., A.E., University of Nebraska; M.S., Ohio State University.
- \*REGISTER, RAYMOND. *Instructor in English*, 1964  
A.B., Howard College.
- \*\*REHARD, BLANCA. *Assistant Professor of Music*, 1955  
Graduate, National Conservatory, Santiago, Chile; Stern Conservatory, Berlin, Germany.
- RENOLL, ELMO S. *Associate Professor of Agricultural Engineering (P.E.)*, 1949, 1955  
B.S., Auburn University; M.S., Iowa State University.
- REYNOLDS, ALFRED WADE. *Head Professor of History and Political Science*, 1913, 1950  
B.S., M.S., Auburn University; M.A., Ph.D., University of California.
- RICHARDSON, JESSE M. *Professor of Economics and Business Administration*, 1943, 1957  
B.S., M.A., University of Alabama; Ph.D., Peabody College.
- RICHARDSON, ROBERT STANLEY. *Assistant Professor of Music*, 1956, 1962  
B.S., M.Ed., Auburn University.
- RITCHIE, VIRGINIA C. *Associate Professor of Home Economics*, 1946, 1954  
B.S., M.S., University of Kentucky.
- RITLAND, RAYMOND W. *Professor of Economics and Business Administration*, 1957, 1959  
B.S.C., M.A., Ph.D., University of Iowa.
- ROAN, FORREST C., JR. *Assistant in Electrical Engineering*, 1963  
B.S.E.E., Auburn University.
- ROBERSON, NANCY C. *Instructor in History and Political Science*, 1959, 1961  
A.B., Randolph-Macon Woman's College; M.A., University of Alabama.
- ROBERTS, CHARLES S. *Professor of Pathology and Parasitology and Acting Assistant State Veterinarian*, 1947, 1963  
D.V.M., Auburn University; M.S., Michigan State University.
- ROBERTSON, BENJAMIN T. *Assistant Professor of Physiology*, 1960, 1963  
B.S., University of Kentucky; D.V.M., M.S., Auburn University.
- \*ROBERTSON, FLORENCE H. *Instructor in Music*, 1963  
B.M., Auburn University.
- ROBINSON, A. JUDE. *Associate Professor of Mathematics*, 1923, 1935  
B.S., Clemson College; M.A., Emory University.
- ROBINSON, CECIL EUGENE. *Assistant Professor of Mathematics*, 1961  
B.S., Auburn University; M.A., Ph.D., University of Alabama.
- ROBINSON, WALTER J., JR. *Assistant Professor of Aerospace Engineering*, 1959  
B.A.A., Auburn University; M.B.A., University of Denver.
- ROGERS, HOWARD TOPPING. *Head of Department, Agronomy and Soils*, 1942, 1951  
B.S., Virginia Polytechnic Institute; M.S., Michigan State University; Ph.D., Iowa State University.

\* Temporary.

\*\* On leave.

- ROGERS, JERRY WILLIAM *Instructor in Electrical Engineering*, 1963  
B.S.E.E., Texas Technological College; M.S.E.E., Texas A. & M. College.
- ROLLINS, GILBERT H. *Associate Professor of Dairy Science*, 1948, 1953  
B.S., M.S., Virginia Polytechnic Institute; Ph.D., University of Illinois.
- \*RONALD, KATHRYN H. *Instructor, Health, Physical Education and Recreation*, 1956, 1963  
B.S., Florida Southern College.
- ROSE, CHARLES S., JR. *Assistant Professor of English*, 1960  
A.B., Vanderbilt University; M.A., Ph.D., University of Florida.
- ROSE, EITHEL *Professor of Home Economics*, 1959  
B.S., M.S., Indiana State College; Ph.D., Ohio State University.
- ROSEN, FREDERIC BRUCE *Assistant Professor of Education*, 1962  
B.A.E., M.A.E., University of Florida.
- ROSEN, MELVIN *Assistant Professor of Health, Physical Education and Recreation*, 1955, 1963  
B.S., M.A., Iowa State University.
- \*ROSENBAUM, JEANNA M. *Instructor in Music*, 1963  
B.A., University of Arkansas.
- ROSENBAUM, LAWRENCE J. *Assistant Professor of Music*, 1961  
B.M., University of Arizona; M.Music, University of Arkansas.
- ROSS, CONRAD H. *Assistant Professor of Art*, 1963  
B.F.A., University of Illinois; M.F.A., University of Iowa.
- ROUGHTON, EDGAR L. *Assistant Professor of Education*, 1963  
B.S., Georgia Southern College; M.Ed., Texas Technological College; Ph.D., University of South Carolina.
- ROUSE, R. D. *Professor of Agronomy and Soils*, 1949, 1956  
B.S., M.S., University of Georgia; Ph.D., Purdue University.
- RUSSELL, DALLAS WILSON *Professor of Electrical Engineering*, 1959, 1963  
B.S.E.E., M.S.E.E., University of Tennessee.
- \*SALZMANN, FRANK L. *Instructor in Mathematics*, 1960, 1963  
B.S., Auburn University.
- SAMUEL, JAMES E. *Assistant Professor of Military Science*, 1962  
B.S., Military Science, University of Maryland; Major, USA.
- SANDERLIN, JAMES C. *Assistant in Electrical Engineering*, 1963  
B.E.E., M.E.E., Auburn University.
- SANDERS, A. DEWEY *Assistant Professor of Mathematics*, 1946, 1947  
B.A., DePauw University; M.A., University of Michigan.
- SANDERS, J. W. *Assistant Professor of Speech*, 1952, 1959  
B.A., Tampa University; B.A., M.A., University of Florida.
- SANDERS, WILLIAM C. *Instructor in Foreign Languages*, 1962  
B.A., Wesleyan University; M.A., University of Connecticut.
- SANYAL, NITISH K. *Research Associate of Physics*, 1962  
B.Sc., M.Sc., University of Allahabad.
- SAUNDERS, CHARLES RICHARD *Dean, School of Chemistry*, 1924, 1950  
B.S., M.S., Auburn University; Ph.D., University of Nebraska.
- SAUNDERS, LARRY A. *Instructor in English*, 1961, 1962  
B.A., M.A., Memphis State University.
- SAUNDERS, ROBERT LAWRENCE *Associate Professor of Education, Assistant Dean of Education*, 1957, 1963  
B.S., M.S., Ed.D., Auburn University.
- \*SAVAGE, KATHERINE D. *Instructor in Foreign Languages*, 1962  
A.B., Auburn University.
- SCARBOROUGH, JOHN LEWIS *Associate Professor of Mechanical Engineering (P.E.)*, 1947, 1954  
B.A.E., B.M.E., Auburn University; M.S., University of Alabama.
- SCARSBROOK, C. E. *Professor of Agronomy and Soils*, 1953, 1959  
B.S., Auburn University; Ph.D., North Carolina State College.
- SCHAEER, WALTER A. *Associate Professor of Architecture*, 1960  
Federal Certificate of Proficiency; Bienne Craft School; Federal Master's Diploma, Master's School for Furnishing and Interior Design; Diploma in Industrial Design, Ulm School of Design.

\* Temporary.

- SCHEID, PAUL W. *Professor of Education*, 1957, 1960  
A.B., Miami University; A.M., Duke University; Ph.D., Ohio State University.
- SCHILL, FRED G. *Head Professor of Large Animal Surgery and Medicine*, 1956, 1959  
D.V.M., Auburn University.
- SCHRADE, GLENN A. *Professor of Chemistry*, 1930, 1949  
B.S., M.S., Beloit College; Ph.D., University of Wisconsin.
- SCHULTZ, F. BERNARD *Special Lecturer, Laboratory Technology*, 1962  
B.S., St. Ambrose College; M.D., Georgetown University.
- SCOTT, MARY ANN *Instructor in English*, 1963  
A.B., Alabama College; M.A., University of North Carolina.
- SEIBOLD, HERMAN R. *Head Professor of Pathology and Parasitology*, 1951, 1963  
V.M.D., University of Pennsylvania. (Resigned 7-12-63)
- SENN, C. L. *Assistant Football Coach*, 1945, 1948  
B.S., Auburn University.
- SESSOMS, MARGARET HANNAH *Catalog Librarian and Instructor*, 1960  
A.B., Alabama College; M. of Librarianship, Emory University.
- SEWELL, ANNIE MARIE *Instructor in English*, 1942  
A.B., Huntingdon College; M.S., Auburn University.
- SHANDS, WAYLAND A. *Assistant Professor of Botany and Plant Pathology*, 1963  
B.S., University of Maine; M.S., University of Delaware.
- SHAW, WINFRED A. *Professor of Mechanical Engineering (P.E.)*, 1958  
B.S.G.E., University of Mississippi; M.S.E.M., University of Texas; Ph.D., Stanford University.
- SHELL, EDDIE WAYNE *Assistant Professor of Zoology-Entomology*, 1952, 1961  
B.S., M.S., Auburn University; Ph.D., Cornell University.
- \*SHELL, MERLIN *Instructor in History and Political Science*, 1963  
B.D., Emory University; B.S., M.A., University of Alabama; M.S., Auburn University.
- SHERLING, WILLIAM C. *Associate Professor of Aerospace Engineering*  
B.A.E., Auburn University; M.S.A.E., Georgia Institute of Technology. (P.E.), 1947, 1954
- SHEVER, IZZYDOR *Instructor in Physics*, 1963  
B.S.E., Auburn University; M.S., University of Florida.
- SHEWELL, JOHN ROBERT *Associate Professor of Physics*, 1960  
B.S.P., M.S.P., Auburn University; Ph.D., Rice University.
- SHIELDS, ALAN J. *Associate Professor of Economics and Business Administration*, 1956, 1963  
B.A., M.A., North Texas State University.
- SHIH, CORNELIUS CHUNG-SHENG *Associate Professor of Civil Engineering*, 1959  
B.S., National Taiwan University; M.S., Ph.D., Michigan State University.
- SHIRK, JEANNETTE C. *Catalog Librarian and Instructor*, 1963  
B.S.L.S., A.B., Carnegie Institute of Technology; M.A., University of Pittsburgh.
- \*SHOEMAKER, JON P. *Instructor in Zoology-Entomology*, 1963  
B.S., M.A., Western Michigan University.
- SHUMARD, GORDON H. *Assistant Professor of Military Science*, 1960  
B.S., U.S. Military Academy; M.ofC.E., Texas A. & M. College; Lt. Col., USA.
- \*SIMPSON, EVELYN S. *Visiting Professor of Secondary Education*, 1962, 1963  
B.S., University of Tennessee; M.S., Columbia University; Ed.D., University of Tennessee.  
(Resigned 7-15-63)
- SKELTON, ROBERT BEATTIE *Head Professor of Foreign Languages*, 1939, 1954  
A.B., Michigan State Normal College; M.A., Ph.D., University of Michigan; Certificado, University of Brazil; Certificado, University of Chile.
- SLAGH, TIM DENNIS *Assistant Professor of Electrical Engineering*, 1958, 1959  
B.S., Michigan College of Mining and Technology; M.S., Auburn University.
- SMITH, ALBERT J. *Assistant Professor of Military Science*, 1963  
A.B., The Citadel; M.A., Emory University; Captain, USA.
- SMITH, CHARLES E. *Assistant in Electrical Engineering*, 1959, 1960  
B.S.E.E., Auburn University.
- SMITH, DONALD M. *Agricultural Engineer, Field Superintendent*, 1962  
B.S., A.N., Auburn University.

- SMITH, E. V. — *Dean, School of Agriculture and Director, Agricultural Experiment Station*, 1929, 1951  
B.S., Auburn University; M.S., Ph.D., Iowa State University.
- SMITH, FLOYD S. — *Associate Professor of Mechanical Engineering (P.E.)*, 1946, 1955  
B.S., Virginia Military Institute; B.S., B.M.E., M.S., Auburn University.
- \*SMITH, FRANCES P. — *Instructor in Art*, 1964  
B.A., University of Alabama.
- SMITH, ROBERT C. — *Associate Professor of Animal Science*, 1961, 1963  
B.S., Elmhurst College; M.S., Ph.D., University of Illinois College of Medicine.
- \*SMITH, WESLEY E. — *Instructor in Chemistry*, 1959  
B.S., Maryville College.
- SMITH, WILLIAM STEPHEN — *Professor of Speech*, 1952, 1959  
B.Ed., Northern Illinois State University; M.A., Ph.D., Stanford University.
- SOLOMON, OLIVIA P. — *Instructor in English*, 1963  
A.B., M.A., University of Alabama.
- SPANN, RANSON D. — *Professor of Electrical Engineering*, 1915, 1951  
B.S.E.E., E.E., Auburn University.
- SPARKS, FRANK M. — *Associate Professor of Physics*, 1943, 1946  
B.S., Auburn University; M.A., Ph.D., University of Illinois.
- SPEARS, WILLIAM D. — *Head Professor of Psychology*, 1961  
A.B., M.Ed., University of Chattanooga; Ph.D., Peabody College.
- SPEER, WILLIAM A. — *Dean, School of Architecture and the Arts*, 1962  
B.S.Arch., Clemson College; M.Arch., Rensselaer Polytechnic Institute.
- SPENCER, GARY DALE — *Assistant Professor of Education; Director, Reading Clinic*, 1963  
B.S., M.A., Ed.D., Arizona State University.
- SPENCER, LILLY HESTER — *Associate Professor of Home Economics*, 1928, 1935  
B.S., M.S., Oklahoma State University.
- SPIDLE, MARION W. — *Dean and Professor of Home Economics*, 1938, 1942  
B.S., Alabama College; B.S., M.A., Columbia University.
- SPRAGUE, ALBERT T., JR. — *Associate Professor of Electrical Engineering (P.E.)*, 1949  
B.S., U.S. Naval Academy; M.S., Harvard University.
- SQUIERS, C. D. — *Associate Professor of Animal Science*, 1950  
B.S., M.A., Ph.D., University of Missouri.
- STALCUP, ROBERT JAMES — *Associate Professor of Educational Administration*, 1960, 1963  
B.S., Huron College; M.A., Ed.D., University of Nebraska.
- STALNAKER, CARROL C. — *Associate Professor of Economics and Business Administration*, 1937, 1946  
B.A., State College of Iowa; M.A., University of Iowa.
- STEELE, H. ELLSWORTH — *Research Professor of Economics and Business Administration*, 1949, 1951  
B.A., M.A., University of Nebraska; Ph.D., Ohio State University.
- STEENSEN, DONALD H. J. — *Assistant Professor of Forestry*, 1960  
B.S., Iowa State University; M.F., Duke University.
- STEPHENS, JULIAN, JR. — *Assistant Professor of Music*, 1963  
B.S., Jacksonville State College; M.A., University of Alabama.
- STEVENS, FRANK J. — *Professor of Chemistry*, 1947, 1959  
B.S., University of Illinois; Ph.D., Iowa State University.
- STOKES, CHARLIE MACK — *Associate Professor of Agricultural Engineering (P.E.)*, 1937, 1962  
B.S., M.S., Auburn University.
- \*STONE, WILLIAM J. — *Instructor in Aerospace Engineering*, 1963  
B.S., M.S., University of Alabama.
- STOVES, WILLIAM H. — *Assistant Professor of Industrial Laboratories*, 1946, 1949  
B.S., M.S., Auburn University.
- STRENGTH, D. RALPH — *Associate Professor of Animal Science*, 1961  
B.S., M.S., Auburn University; Ph.D., Cornell University.

- STRETCHER, ROBERT H., JR. *Instructor in Economics and Business Administration*, 1963  
B.S., Western Carolina College; M.S., University of Tennessee.
- STRICKLAND, JOHN P. *Assistant Professor of Architecture*, 1963  
B.F.A., M.A., Cranbrook Academy of Art.
- STROUD, OXFORD *Assistant Professor of English*, 1950, 1957  
B.S., M.A., Auburn University.
- STERKIE, D. G. *Professor of Agronomy and Soils*, 1925, 1942  
B.S., Auburn University; M.S., Iowa State University; Ph.D., Michigan State University.
- STURM, HAROLD F., JR. *Assistant Professor of Naval Science*, 1963  
B.S., University of South Carolina; Lieutenant, USN.
- SUMMER, HENRY M. *Professor of Electrical Engineering*, 1947, 1961  
B.S., Clemson College; B.E.E., Auburn University; M.S.E.E., North Carolina State College.
- SUTHERLIN, DONALD W. *Assistant in Electrical Engineering*, 1962  
B.S.E.E., Auburn University.
- SWINGLE, HOMER SCOTT *Professor of Zoology-Entomology*, 1929, 1939  
B.S., M.S., D.Sc. (Hon.), Ohio State University.
- SYKES, MALTBY *Professor of Art*, 1942, 1954  
Studied with Wayman Adams, Diego Rivera, John Sloan, George C. Miller, Fernand Leger, Stanley William Hayter, and Andre Lhote.
- SZILASSY, SANDOR *Head, Science and Technology Division and Assistant Professor*, 1961, 1962  
LL.D., University of Budapest; M.A.L.S., Indiana University.
- TAMBLYN, JOHN W. *Professor of Music*, 1948, 1962  
B.S., B.S., Auburn University; M.Mus., Ph.D., University of Rochester.
- TANGER, GERALD EUGENE *Professor of Mechanical Engineering (P.E.)*, 1958, 1960  
B.S., South Dakota School of Mines and Technology; M.S., Brown University; Ph.D., Oklahoma State University.
- TAUGNER, AGNES B. *Assistant Professor of Art*, 1963  
B.F.A., M.F.A., University of Illinois.
- TEAGUE, WAYNE *Assistant Professor of Educational Administration*, 1963  
B.S., M.S., Ed.D., Auburn University.
- TEER, PATRICIA ANNE *Assistant Professor of Pathology and Parasitology*, 1955, 1963  
D.V.M., M.S., Auburn University.
- TEHRILL, LAURA LEA *Assistant Professor of Home Economics*, 1963  
B.S., Ouachita College; M.S., Pennsylvania State University.
- THACKER, H. R. *Associate Professor of Civil Engineering*, 1956, 1959  
B.S., M.S., Virginia Polytechnic Institute.
- THOMAS, OSCAR L. *Assistant Professor of Air Science*, 1963  
B.S., M.S., Memphis State University; Captain, USAF.
- THOMASSON, STANLEY *Associate Professor of Architecture*, 1958, 1963  
Certificate, Stanley Technological Institute, London; B.Arch., Tulane University.
- THOMPSON, SIDNEY LEE *Associate Professor of Mathematics*, 1937, 1948  
B.S., Birmingham-Southern College; M.S., Tulane University; M.A., University of Michigan.
- TOMLIN, JAMES GROVER *Instructor in Health, Physical Education and Recreation*, 1958  
B.S., M.Ed., Auburn University.
- TUCKER, HOWARD F. *Associate Professor of Animal Science*, 1949, 1962  
B.S., M.S., Ph.D., Auburn University.
- \*TUCKER, JOSEPH, JR. *Instructor in Mathematics*, 1963  
B.S., University of Alabama; M.S., Auburn University.
- TURNER, LOUISE K. *Assistant Professor of Health, Physical Education and Recreation*, 1937, 1946  
B.A., Southwestern Louisiana University; M.A., M.S., Louisiana State University.
- TURNER, D. M. *Associate Professor of Animal Science*, 1940, 1962  
B.S., Auburn University; M.S., University of Illinois.
- UMBACH, ARNOLD W. *Professor of Health, Physical Education and Recreation*, 1944, 1945  
B.S., Southwestern State Teachers College; M.A., Colorado State College of Education.

- VACHON, REGINALD V. *Associate Professor of Mechanical Engineering*  
B.M.E., M.S.N.S., Auburn University; Ph.D., Oklahoma State University. (P.E.), 1961, 1963
- \*VALLERY, GEORGIA G. *Acting Assistant Professor of Psychology*, 1951, 1963  
B.S., M.A., Louisiana State University; M.S., Auburn University.
- VAN DE MARK, MILDRED S. *Associate Professor of Home Economics*, 1948, 1955  
B.S., Auburn University; M.A., Columbia University.
- VANCE, OLLIE LAWRENCE *Assistant Professor, Mechanical Engineering*, 1959, 1962  
B.M.E., M.S.M.E., Auburn University.
- VAUGHAN, JOHN T. *Assistant Professor of Large Animal Surgery and*  
D.V.M., M.S., Auburn University. *Medicine*, 1955, 1959
- VESTAL, DONALD M., JR. *Head Professor of Mechanical Engineering (P.E.)*, 1959  
B.S.M.E., B.S.E.E., M.S.M.E., Texas A. & M. College; Ph.D., Stanford University.
- \*VINSON, RICHARD G. *Visiting Professor of Secondary Education*, 1963  
B.A., Huntingdon College; M.A., Florida State University; Ph.D., University of Alabama.
- VIVES, DONALD LOUIS *Associate Professor of Chemical Engineering*, 1953, 1957  
B.S., M.S., Columbia University.
- WALDO, MYRTICE R. *Assistant Professor of Economics and Business*  
B.S., M.S., Auburn University. *Administration*, 1949, 1959
- WALDROP, HERBERT *Instructor in Health, Physical Education and Recreation*, 1960  
B.S., M.S., Auburn University.
- WALKER, BRACK *Instructor in Art*, 1961  
B.A., Florence State College; M.F.A., University of Southern California.
- WALKER, DONALD F. *Associate Professor, Large Animal Surgery and Medicine*, 1958  
D.V.M., Colorado State University.
- WALL, MINNIE *Head of Catalog Division and Assistant Professor*  
(Library), 1947, 1959  
A.B., Tift College; B.S.L.S., Peabody College; M.Ed., Auburn University.
- WALLS, BILLY G. *Assistant Professor of Music*, 1961  
B.M., Baylor University; M.Mus., Manhattan School of Music.
- WALTON, MARTHA HELEN *Assistant Professor of Health, Physical*  
*Education and Recreation*, 1945, 1952  
B.S., Auburn University; M.A., Colorado State College.
- WARBINGTON, THOMAS L. *Assistant Professor of Foreign Languages*, 1960, 1962  
B.S., Mississippi College; M.A., University of Mississippi.
- WARD, BENJAMIN P. *Associate Professor of Mechanical Engineering (P.E.)*, 1950  
B.S., U.S. Naval Academy; M.S.M.E., Columbia University.
- \*WARD, CHARLOTTE R. *Instructor in Physics*, 1959, 1961  
B.S., University of Kentucky; Ph.D., Purdue University.
- WARD, CURTIS HOWARD *Associate Professor of Chemistry*, 1957  
B.S., Indiana State Teachers College; M.S., University of Kentucky; Ph.D., Purdue University.
- WARE, LAMAR M. *Head of Department, Horticulture*, 1923, 1931  
B.S., M.S., Auburn University.
- WARNER, JOHN ELLSWORTH *Head, Social Science Division and*  
*Assistant Professor (Library)*, 1959, 1962  
B.S., B.S.L.S., New York State Teachers College; M.A., Ed.D., Columbia University.
- WARREN, W. M. *Head of Department, Animal Science*, 1955, 1957  
B.S., Michigan State University; M.S., Texas A. & M. College; Ph.D., University of Missouri.
- WASHINGTON, WILLIAM TAYLOR *Instructor in Health, Physical*  
B.S., Auburn University. *Education and Recreation*, 1958
- WATERS, WILLIAM T. *Professor of Textile Technology*, 1958, 1963  
B.S.T.E., Clemson College; M.S., Institute of Textile Technology.
- WATWOOD, VERNON B. *Professor of Civil Engineering (P.E.)*, 1929, 1941  
B.C.E., M.C.E., Auburn University.
- WEAR, JOHN I. *Professor of Agronomy and Soils*, 1939, 1959  
B.S., M.S., Auburn University; Ph.D., Purdue University.
- WEAVER, ANDREW MALCOLM *Assistant Professor of Education*, 1960  
B.S., Tennessee Polytechnic Institute; M.A., Ed.D., University of Tennessee.



- WEAVER, CHARLES HADLEY. *Head Professor and Westinghouse Professor of Electrical Engineering (P.E.)*, 1959, 1963  
B.S.E.E., M.S.E.E., University of Tennessee; Ph.D., University of Wisconsin.
- WEIDENBACH, WILHELM H. *Assistant to Dean and Director, School of Agriculture and Agricultural Experiment Station*, 1925, 1942  
B.S., Auburn University.
- \*WEISSINGER, IRA, JR. *Instructor in History and Political Science*, 1960, 1964  
B.A., M.S., Auburn University.
- \*WEISSINGER, RAE *Instructor in English*, 1960, 1963  
B.A., Augustana College.
- WELLS, JOSEPH WILLARD *Associate Professor of Architecture*, 1956  
B.Arch., Cornell University.
- WEST, HOWARD M. *Assistant Professor of Air Science*, 1963  
B.S., University of Maryland; Major, USAF.
- WESTBURY, CARLTON JACK *Assistant Professor of Textile Technology*, 1964  
B.S., M.S., Georgia Institute of Technology.
- WHIPPLE, STEPHEN DUANE *Associate Professor of Forestry*, 1958  
B.S., M.F., University of Michigan.
- WHITE, MORRIS *Professor of Agricultural Economics*, 1950, 1960  
B.S., Auburn University; M.S., Ph.D., Purdue University.
- WHITE, RAYMOND H. *Professor of Educational Administration*, 1950, 1951  
B.S., Southwest Missouri State College; A.B., Drury College; A.M., University of Chicago; Ed.D., Columbia University.
- \*WHITE, VIRGINIA C. *Assistant Professor of Home Economics*, 1954, 1956  
B.S., Alabama College; M.S., University of Tennessee.
- \*\*WHITEFORD, ROBERT D. *Associate Professor of Anatomy and Histology*, 1959  
M.S., Iowa State University; D.V.M., University of Georgia.
- WIDDOWSON, WALTER L. *Instructor, Small Animal Surgery and Medicine*, 1963  
D.V.M., University of Georgia.
- WIGGINS, AGEE M. *Professor of Large Animal Surgery and Medicine*, 1946, 1959  
D.V.M., Auburn University; M.S., Kansas State University.
- WIGGINS, EARL L. *Associate Professor of Animal Science*, 1956  
B.S., M.S., Oklahoma State University; Ph.D., University of Wisconsin.
- WILBANKS, MARY ELIZABETH *Special Collections Librarian and Instructor (Library)*, 1959, 1962  
A.B., Alabama College; M.A., Emory University; M.S.L.S., University of North Carolina.
- WILHELM, WILLIAM J. *Instructor in Engineering Graphics*, 1960  
B.S.M.E., M.C.E., Auburn University.
- WILKIN, LEON O., JR. *Associate Professor of Pharmacy*, 1963  
B.S., Loyola University; M.S., Ph.D., University of Texas.
- WILLIAMS, BYRON B., JR. *Professor of Pharmacy*, 1951, 1962  
B.S., M.S., Ph.D., University of Florida.
- WILLIAMS, DAVID J., III *Assistant Professor of Large Animal Surgery and Medicine*, 1961, 1963  
D.V.M., B.S.A., University of Georgia; M.S., Auburn University.
- WILLIAMS, ELIZABETH GRIMES *Assistant Professor of Economics and Business Administration*, 1946, 1959  
B.S., M.S., Auburn University.
- WILLIAMS, ERNEST *Professor of Mathematics*, 1934, 1948  
B.S., Birmingham-Southern College; M.S., Auburn University; Ph.D., University of Michigan.
- WILLIAMS, HUGH O. *Associate Professor of Art*, 1957, 1959  
B.A.A., Auburn University; M.F.A., A.E.D., Columbia University.
- WILLIAMS, MARVIN O. *Assistant Professor of Aerospace Engineering*, 1942, 1944  
A.B., Birmingham-Southern College; B.A.E., Auburn University.
- WILLIAMS, RALPH I. *Professor of Air Science*, 1960  
B.A., M.A., University of Maryland; Colonel, USAF.
- WILLIAMSON, EDWARD C. *Associate Professor of History and Political Science*, 1957, 1963  
A.B., M.A., University of Florida; Ph.D., University of Pennsylvania.

\* Temporary.

\*\* On leave.



- WILSON, LOWELL E. *Associate Professor of Agricultural Economics*, 1960, 1963  
B.S., Murray State College; M.S., University of Kentucky; Ph.D., University of Illinois.
- WILT, GERALD R. *Instructor in Bacteriology*, 1962  
B.S., Western Kentucky State College; M.S., Clemson College.
- WINGARD, JOHN WILLIAM *Assistant Professor of Industrial Laboratories*, 1957, 1962  
B.S., Auburn University.
- WINGARD, ROBERT EUGENE *Head Professor of Chemical Engineering*, 1932, 1963  
B.S., M.S., Auburn University.
- WINKLER, JOHN K. *Associate Professor of Large Animal Surgery and Medicine*, 1962, 1963  
D.V.M., Colorado State University.
- WISEMAN, RAY *Instructor in Aeronautical Administration*, 1963  
B.S., Auburn University.
- \*WISNER, ORIOLA *Professor of Psychology*, 1963  
B.A., University of Tennessee; M.A., University of Chicago; Ed.D., Harvard University. (Resigned 8-31-63)
- WITHEROW, THOMAS S. *Assistant Professor of Naval Science*, 1963  
B.S., American University; Lieutenant Commander, USN.
- WOODALL, JAMES R. *Associate Professor of English*, 1952, 1957  
B.S., Murray State College; M.A., University of Kentucky; Ph.D., Vanderbilt University.
- \*WOODLEY, ANNETTE *Instructor in Economics and Business Administration*, 1959, 1962  
B.S., Auburn University.
- WOODLEY, CHARLES H. *Associate Professor of Physiology and Pharmacology*, 1958, 1963  
D.V.M., M.S., Auburn University.
- WRIGHT, JACK, JR. *Instructor in Economics and Business Administration*, 1963  
A.B., Northwest Nazarene College; M.A., Louisiana State University.
- YARBROUGH, RALPH G. *Assistant Professor of Military Science*, 1963  
B.S., Texas Technological College; Captain, USA.
- YEAGER, JOSEPH H. *Professor of Agricultural Economics*, 1946, 1957  
B.S., M.S., Auburn University; Ph.D., Purdue University.
- YORK, LEO WAYNE *Head of Acquisitions Division and Assistant Professor (Library)*, 1960  
B.Mus., University of Oregon; M.M.E., M.S.L.S., Florida State University.
- YOUNG, LUTHER M. *Associate Professor of Health, Physical Education and Recreation*, 1944, 1959  
B.S., M.S., Auburn University.
- YOUNG, RICHARD EARLE *Assistant Professor of Secondary Education*, 1959, 1963  
B.S., Florence State College; M.A., Putney Graduate School of Teacher Education; M.Ed., D.Ed., Auburn University.
- \*YOUNG, SAM W. *Assistant Professor of Mathematics*, 1963  
B.A., M.A., University of Texas. (Resigned 8-31-63)
- ZALLEN, HAROLD *Associate Professor of Pharmacy*, 1961  
B.S., Northeastern University; Ed.M., Boston University; B.S., Ph.D., Purdue University.
- ZIEGLER, PAUL F. *Associate Professor of Chemistry*, 1949, 1958  
B.S., Otterbein College; M.S., Ph.D., University of Cincinnati.
- ZIVKOVIC, PETER D. *Assistant Professor of English*, 1960, 1963  
B.S., M.A., University of Illinois.
- ZURFLIEH, THOMAS PETER *Instructor in Engineering Graphics*, 1960  
B.S., Massachusetts Institute of Technology; M.S.M.E., Auburn University.

\* Temporary.

## EMERITI, 1963

- ALLISON, FRED. *Professor Emeritus of Physics, March, 1961*  
A.B., Emory and Henry College; M.A., Ph.D., University of Virginia.
- ATKINSON, T. P. *Professor Emeritus of Foreign Languages, March, 1961*  
Ph.B., A.B., Lebanon University; M.A., University of Georgia.
- BASORE, CLEBURNE A. *Professor Emeritus of Chemical Engineering, June, 1963*  
B.S., M.S., Auburn University; M.A., University of Michigan; Ph.D., Columbia University.
- CAMP, E. W. *Professor Emeritus of Textile Technology, March, 1961*  
B.S., Georgia School of Technology; M.S., Auburn University.
- EATON, W. H. *Associate Professor Emeritus of Dairy Husbandry, March, 1961*  
B.S., North Carolina State College.
- GRIMES, J. C. *Professor Emeritus of Animal Husbandry and Nutrition, March, 1961*  
B.S., University of Tennessee; M.S., University of Kentucky.
- GUYTON, FAYE E. *Professor Emeritus of Zoology-Entomology, June, 1963*  
B.S., M.S., Ohio State University.
- HILL, W. W. *Professor Emeritus of Electrical Engineering, March, 1961*  
B.S., M.S., M.E., Auburn University; E.E., University of Wisconsin; M.E.E., Johns Hopkins University.
- HUTSELL, WILBUR HALL. *Professor Emeritus, Athletic Department, June, 1963*  
A.B., University of Missouri.
- ISELL, C. L. *Professor Emeritus of Horticulture, March, 1961*  
B.S., Auburn University; M.S., Ph.D., Michigan State University.
- JONES, DAN T. *Professor Emeritus of Industrial Laboratories, June, 1961*  
Diploma, Auburn University.
- KUDERNA, JEROME. *Professor Emeritus of Education, June, 1962*  
B.S., M.A., Michigan State University.
- PITTS, JOHN A. *Associate Professor Emeritus of Mathematics, March, 1961*  
B.S., E.E., Auburn University.
- ROE, JOHN W. *Associate Professor Emeritus of Foreign Languages, March, 1961*  
A.B., M.A., Cornell University.
- SAHAG, L. M. *Professor Emeritus of Engineering Graphics, March, 1961*  
B.S., University of North Carolina; M.S., Auburn University.
- SEAL, JAMES LEWIS. *Professor Emeritus of Botany, June, 1963*  
B.S.Agr., Clemson Agricultural College; M.S., Iowa State University; Ph.D., University of Minnesota.
- SHOWALTER, B. R. *Professor Emeritus of Education, March, 1961*  
A.B., Oberlin College; M.A., Ph.D., Columbia University.

## ADMINISTRATIVE STAFF

- AMENT, B. DONALD. *Assistant Director, University Personnel Office, 1960, 1963*  
B.S., Central Missouri State College.
- ARNOLD, JACQUELINE W., R.N. *Nurse, Infirmary, 1963*
- BARROW, WILLIAM OWENS. *Senior Counselor, Student Counseling*  
A.B., Birmingham-Southern College; M.A., Peabody College. *Service, 1948, 1951*
- BECKWITH, WILLIAM H. *Director of Sports Public Relations, 1951, 1958*  
B.S., Auburn University.
- BELSER, MARY LITTLEJOHN. *Senior Library Assistant, Social Science Division, 1963*  
A.B., Sweet Briar College; M.A., Peabody College.
- BENTLEY, CHARLES S. *Manager, Magnolia Dormitories, 1951, 1963*  
B.S., M.S., Auburn University.
- BICKEL, MARGARET E. *Tabulating Equipment Supervisor,*  
*Business Office, 1945, 1963*
- BLODGETT, FRANK EDWARD. *Producer-Director, Educational TV, 1962*  
B.S., M.A., University of Florida.
- BOWMAN, JOSEPH R. *Construction Engineer, Buildings and Grounds, 1945*
- BRINEY, JAMES R., III. *Senior Systems Analyst, Computer Center, 1959, 1962*  
B.S., Auburn University.
- BURGESS, DONALD LOUIS. *Production Supervisor, Educational TV, 1961, 1962*  
B.A., University of Nebraska; M.S., Syracuse University.
- CALHOUN, GUSSIE R. *Assistant to the Dean of Women, 1963*  
B.A., M.A., Louisiana Polytechnic Institute.
- CARGILE, TRUDY. *Editor, University News Bureau, University Relations, 1962*
- CARGILE, ROY C. *Bursar, Business Office, 1945*  
B.S., M.S., Auburn University.
- CHAPMAN, RUBERT DANIEL, JR. *Senior Pilot, Auburn School of Aviation, 1962*
- CHENEY, ILA S. *Library Assistant, Circulation Division, 1963*  
A.B., Union University.
- COOK, CLARENCE E. *Director of Auburn Union, 1960*  
B.A., M.A., Birmingham-Southern College.
- COPPEGE, HELEN C. *Dietitian, Alumni Cafeteria, 1952, 1953*  
B.S., Oklahoma A. & M. College.
- CREEK, GLORIA, R.N. *Nurse, Infirmary, 1960*
- DAVIS, MARY LOU. *Assistant Dietitian, Women's Dining Hall, 1961*  
B.S., Auburn University.
- DAWSON, MILLARD E. *Chief Security Officer, Buildings and Grounds, 1951*
- DENSON, ROBERT V. *Program Director, Auburn Union, 1962*  
B.S., M.S., Auburn University.
- DEVALL, ELNORA. *Assistant Dietitian, Magnolia Dining Hall, 1960*  
B.S., Syracuse University; M.S., Auburn University.
- DUGGER, FOWLER, JR. *Administrative Assistant, Writer,*  
*Development Publications, 1953, 1960*  
A.B., University of Alabama; M.A., Duke University.
- DUNN, BERTA C. *Administrative Secretary and Secretary to Board*  
*of Trustees, President's Office, 1919, 1959*
- EDEN, THOMAS M., JR. *Producer-Director, Educational TV, 1955, 1962*  
B.S., Auburn University.
- EDWARDS, CLERCIE SMALL. *Assistant Registrar, Registrar's Office, 1938, 1945*  
A.B., Huntingdon College.
- FLOURNOY, GEORGE B. *Resident Manager, Plainsman Dormitory, 1963*  
B.S., Auburn University.
- FORBUS, MARY CECIL. *Dietitian, South Women's Dining Hall, 1962*  
B.S., Alabama College.
- FOSTER, GEORGE C. *Assistant to the Dean, School of Science and Literature, 1952*  
B.S., Auburn University.
- GALBREATH, DURWARD H. *Executive Officer, Dept. of Military Science, 1963*  
B.S., United States Military Academy; Lt. Col., USA.
- GRAVES, MILTON L., JR. *Chief Clerk, Buildings and Grounds, 1962*  
B.S.I.M., Auburn University.
- HALLIWELL, NANCY H. *Library Assistant, Science and Technology Division, 1963*  
B.A., University of Florida.

- HANEY, PATTIE ..... *Administrative Assistant, Alumni Office, 1934, 1963*
- HAWKINS, HERBERT N. .... *Assistant Director for High School*  
B.S., M.S., Auburn University. .... *Relations, University Relations, 1962*
- HENRY, PAUL W. .... *Assistant Business Manager, Business Office, 1954*
- HILL, A. A. .... *Electrical Foreman, Buildings and Grounds, 1943*
- HOWARD, MILFORD K. .... *Trainer, Athletics, 1948*  
B.S., Auburn University.
- JENKINS, FRANK W. .... *Counselor III, Vocational Rehabilitation Service, 1949, 1962*  
A.B., Emory University; M.Ed., Auburn University.
- JOHNSON, WENDELL W. .... *Cinematographer, Educational TV, 1963*  
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- JONES, ANNIE MERL, R.N. .... *Nurse, Infirmary, 1955*
- JONES, HANDEL ..... *Assistant to Dean of Engineering, 1958, 1964*  
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- JONES, WENDELL ..... *Coordinator of TV Instruction, Educational TV, 1962*  
B.S., Iowa State University.
- JONES, WILLIAM L. .... *Supervisor, Duplicating Service, 1949, 1960*
- KEY, MAXINE J., R.N. .... *Nurse, Infirmary, 1963*
- KING, LESTER C. .... *Supervisor of Photographic Services, 1949, 1962*
- KIRKWOOD, ALICE P. .... *Payroll Accountant, Business Office, 1951, 1963*
- KNAPP, BYRON S., M.D. .... *Assistant Director of Student Health, 1961*  
B.S., M.D., Wayne University.
- KNAPP, FRANCES D., R.N. .... *Nurse, Infirmary, 1961*
- MCDONALD, AUDLEY C. .... *Administrative Assistant to the Dean of Engineering, 1963*  
B.S., Louisiana State University; M.A., Colgate University.
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..... *University Relations, 1962*
- McMILLAN, LOLA C. .... *Library Assistant, Binding and Receiving Room, 1953, 1962*
- MEREDITH, FRANCES B. .... *Library Assistant, Social Science Division, 1963*  
B.S., Weelock College.
- MILLER, AUBREY ALFRED ..... *Housing Manager, 1947, 1950*  
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B.S., Alabama College.
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B.S., Auburn University.
- NEISLER, HELEN R. .... *Technical Editor, School of Engineering, 1962*  
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- OLDHAM, PEGGY SMITH ..... *Personnel Assistant, Personnel Office, 1959, 1963*  
B.S., Memphis State University.
- OWEN, JAMES ERNEST ..... *Director, Choctaw County School Improvement*  
B.S., Jacksonville State College; M.A., University of Alabama. .... *Program, 1963*
- PEAK, JOY W., R.N. .... *Evening Supervisor, Drake Infirmary, 1955, 1964*
- PENN, JACK E. .... *Assistant Producer-Director, Educational TV, 1963*
- POWELL, CINDERELLA M. .... *Supervisor of Women's Dormitories, 1947*
- POWELL, WILLIAM FRANK ..... *Purchasing Agent, Business Office, 1950*  
B.S., Auburn University.
- PRATHER, MARY M. .... *Assistant Dietitian, Alumni Cafeteria, 1962*  
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- PRESCOTT, BOBBY J. .... *Television Engineer, Educational TV, 1963*
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B.S., Auburn University; B.S., Northwestern University.
- RAGAN, DREW ..... *Activities Advisor, Office of Student Affairs, 1960, 1962*  
B.S., Auburn University.
- RILEY, RHETT E. .... *Internal Auditor, Business Office, 1963*  
B.S., Auburn University.

- ROBERTS, J. HOYT..... *Counselor III, Vocational Rehabilitation*, 1959, 1963  
B.S., M.S., Jacksonville State College.
- RODEN, JERRY, JR..... *Editor, The Auburn Alumnews*, 1947, 1957  
B.S., M.A., Auburn University.
- RODEN, REBECCA HARRIS..... *Administrative Assistant, Graduate School*, 1956, 1962  
B.S., Auburn University.
- ROY, KENNETH B..... *Head, Department of Publications*, 1943, 1948  
B.J., University of Missouri.
- RUSH, KATHRYN S..... *Food Director, Dining Hall Service*, 1949, 1951  
B.S., M.S., Auburn University.
- SCHUESSLER, VIRADA K..... *Counselor, School of Education*, 1961  
B.A., Judson College; M.Ed., Auburn University.
- SELLERS, MARY F., R.N..... *Nurse, Infirmary*, 1944  
B.S., Auburn University.
- SHEPHERD, JOY H..... *Library Assistant, Readers' Advisory Service*, 1963  
A.B., Auburn University.
- SIMMONS, ELDRIDGE C., M.D..... *Assistant Director of Student Health*, 1960  
B.S., M.D., University of Virginia.
- SIMMS, GRACE F., R.N..... *Nurse, Infirmary*, 1944
- SIMS, BENNETT..... *Store Manager, University Bookstore*, 1946, 1947
- SKINNER, HOWARD ODELL..... *Program Director, Educational TV*, 1959, 1962  
B.S., University of Florida.
- STEELE, E. FRED, II..... *Producer-Director, Educational TV*, 1963  
B.S., Iowa State University.
- STEWART, JON ANNIS..... *Research Consultant, Computer Center*, 1961, 1962  
B.S., Tulane University; M.A., Indiana University.
- STRONG, HOWARD..... *Assistant to Dean, Pre-Engineering*, 1947, 1960  
B.S.Ed., M.S.Ed., Auburn University; Ed.D., Columbia University.
- STRONG, ROBERT BRYANT..... *Assistant Director, Student Financial Aid*, 1962  
B.S., M.S., Auburn University.
- SUBLETT, PEARL S..... *Dietitian, Magnolia Dining Hall*, 1961  
B.S., Alabama College; M.S., Auburn University.
- \*SZILASSY, CLARA I..... *Writer in Learning Resources Center*, 1962  
LL.D., University of Pecs (Hungary).
- \*\*TAYLOR, EDWARD B..... *Assistant Director of Engineering Extension*, 1957, 1959  
B.S., Davidson College; B.S.T.M., North Carolina State College; M.S., Columbia University.
- THURSTON, MILTON C..... *Equipment and Plant Manager, Athletics*, 1946, 1950
- TIPPINS, FRANCES E..... *Administrative Assistant, Business Office*, 1929, 1959
- TUCKER, INEZ J..... *Dietitian, War Eagle Cafeteria*, 1952, 1955  
B.S., Auburn University.
- TURNIPSEED, LAMARGARET..... *Head of Women's Housing*, 1947, 1952  
B.A., Huntingdon College; M.S., Auburn University.
- VANDEGRIFT, FRANK..... *Assistant Director, Engineering Extension Service*, 1964  
B.M.E., Georgia Institute of Technology; M.A., Columbia Theological Seminary.
- VAN GILDER, SARAH E..... *Assistant Dietitian, South Women's Dining Hall*, 1960  
B.S., Auburn University.
- WALTON, JOHN H..... *Carpenter Foreman, Buildings and Grounds*, 1947
- WARE, ROBERT ELMORE..... *Chief Engineer, Educational TV*, 1957, 1959  
B.S., Auburn University.
- WARNER, JOSEPHINE F..... *Counselor, Student Counseling Service*, 1962  
B.S., Jacksonville State College; M.S., Auburn University; Ed.D., Columbia University.
- WEBSTER, MARGARET NUNN..... *Dietitian, Women's Dining Hall*, 1960  
B.S., Auburn University.
- WHITE, J. HERBERT..... *Field Secretary, Alumni Association*, 1960  
B.S., Auburn University.
- WHITE, WILLIAM H..... *Accountant, Business Office*, 1963  
B.S., Troy State College.
- WHITMAN, J. M..... *Plumbing and Heating Foreman, Buildings and Grounds*, 1940, 1942
- WILLIAMS, DONALD FRANKLIN..... *Counselor, Student Counseling Service*, 1963  
B.A., Mississippi College; M.Ed., Auburn University.

\* Temporary.

\*\* On leave.

- WILLIAMS, L. B. *Editor, University Publications, University Relations*, 1956, 1962  
B.S., Troy State College; M.S., Peabody College.
- WILSON, JACK O., JR. *Campus Foreman, Buildings and Grounds*, 1947, 1953
- WINGATE, HENRY T. *Assistant to the Dean, Veterinary Medicine*, 1927, 1959  
B.S., Auburn University.
- WISEMAN, ELLEN L. *Library Assistant, Reader's Advisory Service*, 1961, 1962  
A.B., Auburn University.
- WOODS, MARGARET, R.N. *Nurse, Infirmary*, 1953
- WRIGHT, LeNEAL D., R.N. *Superintendent of Nurses, Infirmary*, 1941, 1950

## SENIOR CLERICAL AND TECHNICAL STAFF

- BAILEY, BESSIE *Chief Operator PBX, Buildings and Grounds*, 1947, 1959
- BANKS, RUTH B. *Senior Secretary, President's Office*, 1961, 1963
- BARNES, ANNA P. *Head Resident, Lupton Hall and College Chaperone*, 1945, 1956  
B.M., Judson College.
- BARTEE, ANNETTE M. *Bookkeeper, Food Service*, 1951, 1957
- BARTON, FREIDA C. *Head Resident of Dana Gatchell Hall*, 1956, 1962
- BEASLEY, JOAN *Senior Clerk, University Personnel Office*, 1962
- BLACK, HENRY G., JR. *Electronics Technician in Electrical Engineering,  
Auburn Research Foundation*, 1961
- BLAKE, BRUCE D. *Senior Clerk, School of Science and Literature*, 1947, 1959  
B.S., Auburn University.
- BLAKE, MARY J. *Senior Auditing Clerk, Business Office*, 1961, 1963  
B.A., Hollins College.
- BONEY, LOUISE B. *Cashier, Business Office*, 1945, 1959
- BRACKIN, HERBERT GLENN, JR. *Studio Supervisor, Educational TV*, 1960, 1963  
B.S., Auburn University.
- BRUNSFELD, ALLEN E. *Instructor of Naval Science*, 1962
- BRITTAIN, JOYCE T. *Senior Secretary, Engineering Administration*, 1957, 1960
- BURKES, PAUL L. *Instructor of Military Science*, 1962
- BURROUGHS, CHARLES R. *Maintenance Mechanic, Buildings and Grounds*, 1963
- CAINE, LEON D. *Floor Maintenance Foreman, Buildings and Grounds*, 1946, 1957
- CAIRNS, LOIS E. *Senior Secretary, Architecture Administration*, 1961, 1962
- CANADAY, HAROLD L. *Assistant Small Arms Repairman, Military Science*, 1962
- CARTER, MARY ANN *Ticket Clerk, Athletics*, 1962
- CLAY, MARJORIE G. *Senior Secretary, Athletics*, 1954  
B.S., Auburn University.
- CLOYD, THOMAS C. *Storeroom Supervisor, Food Service*, 1946, 1951
- CONWAY, LEONARD R. *Building Services Supervisor, Magnolia Dormitories*, 1960
- \*CORR, RALEIGH *Laboratory Mechanician, Physics*, 1958
- CULLARS, J. W. *Maintenance Custodian, Magnolia Dormitories*, 1945, 1952
- DAVIS, JAMES S. *Instructor of Military Science*, 1962
- DAVIS, JOHN C. *Professional Horseman, Large Animal Surgery and Medicine*, 1963
- DAVIS, LUTHER E. *Laboratory Mechanician, Textile Technology*, 1955
- DAVIS, MYRTIE K. *Senior Secretary, Business Office*, 1959, 1961
- DENNIS, MARIANNE *Laboratory Technician A, Anatomy and Histology*, 1958
- DILWORTH, BEN P. *Assistant Supervisor of Vocational Agriculture*, 1946, 1958  
B.S., Mississippi State College.
- DIXON, CAROLYN J. *Senior Clerk, School of Science and Literature*, 1960, 1962  
B.S., Auburn University.
- DIXON, GWENDOLYN McDONALD *Laboratory Technician A, Home Economics*, 1962  
B.S., Tennessee Polytechnic Institute.
- DOROUGH, J. D. *Pest Control Foreman, Buildings and Grounds*, 1949
- DUBOSE, ERNEST I. *Assistant Janitor Foreman, Buildings and Grounds*, 1963
- EVANS, HARRY D. *Education Training Specialist, Air Science*, 1961
- FILES, A. J. *Laboratory Mechanician, Physics Department*, 1959



FORRESTER, KESS L., III	Architectural Draftsman, Buildings and Grounds, 1963
GALLOWAY, ELOISE	Senior Clerk, Admissions Office, 1960, 1962
GLISSON, GLENN A.	Education Training Specialist, Air Science, 1960
GODFREY, CLIFFORD B., JR.	Assistant Plumbing and Heating Foreman, Buildings and Grounds, 1963
GRAY, LEON A., JR.	Laboratory Mechanician, Civil Engineering, 1955
GREEN, HOWARD W.	Assistant Supervisor in Vocational Agriculture, 1948, 1958 B.S., M.S., Auburn University.
GRITZ, INEZ B.	Laboratory Technician A, Home Economics, 1961 B.A., M.S., Auburn University.
HARGIS, HERBERT H.	Instructor, Naval Science, 1963
HATMAKER, JOHN W.	Supply Sergeant, Military Science, 1962
HAWKINS, CARL J.	Shop Foreman, Buildings and Grounds, 1959
HENRY, NOLAN G.	Assistant Marine Officer Instructor, Naval Science, 1961
HILL, SHARON MURPHY	Artist, Learning Resources Center, 1963 B.I.D., Auburn University.
HINES, MALISSA C.	Head Resident of Dormitory B, 1960, 1962
HODGE, ROBERT E., JR.	Education Training Specialist, Air Science, 1963
HOLLINGSWORTH, MABEL H.	Head Resident of Broun Hall, 1958
HOOD, RICHARD L.	Assistant Janitor Foreman, Buildings and Grounds, 1957
HORNSBY, JESSIE DOWDLE	Laboratory Mechanician, Mechanical Engineering, 1960
HUDSON, BILLY R.	Paint Foreman, Buildings and Grounds, 1962
HUDSON, FRANK L.	Building Services Supervisor, Auburn Union, 1959, 1963
HUDSON, PARIS L., JR.	Education Training Specialist, Air Science, 1962
HUFF, ATLAS B.	Head Resident of Owen Hall, 1962
JACKSON, LESLIE W.	Instructor, Military Science, 1955
JENKINS, ELIZABETH E.	Head Resident of Harper Hall, 1954, 1956
JOHNSON, JUANITA A.	Senior Secretary, Dean of Faculties, 1963
JOLLY, H. H.	Laboratory Mechanician, Aerospace Engineering, 1957
JONES, BILLY JACK	Linotype Operator, Duplicating Service, 1959
JONES, JAMES R.	Chief Administrative Clerk, Military Science, 1962
JONES, JEWEL VIRGINIA	Senior Clerk, Zoology-Entomology, 1941, 1962
KING, ALICE B.	Senior Secretary, Buildings and Grounds, 1948, 1959
KING, GAYE	Head Resident of Glenn Hall, 1958
KLASE, NORMAN N.	Instructor, Naval Science, 1961
LEE, LUTHER J.	Senior Enlisted Instructor, Military Science, 1962
LEE, URSULA S.	Senior Clerk, Registrar's Office, 1962 B.A., Elmhurst College.
LESTER, LoRAYNE P.	Senior Secretary, Auburn Research Foundation, 1958, 1961
LEWIS, ESTHER C.	Head Resident of Little Hall, 1962
LEWIS, HOMER N.	Livestock Specialist, Vocational Agriculture, 1954, 1960 B.S., M.S., Auburn University.
LORD, HAROLD F.	Commutation Uniform Custodian, Air Science, 1961
LORUSSO, JOSEPH T., JR.	Instructor, Military Science, 1963
LOWE, ROBERT HENRY	Assistant Campus Foreman, Buildings and Grounds, 1962
MADDOX, ROBERT	Instructor, Military Science, 1962
MADDUX, KAY J.	Senior Secretary, University Relations, 1961, 1962 B.S., University of Tennessee.
MARTIN, JOSEPH M.	Education Training Specialist, Air Science, 1962
MCCARTY, MARY L.	Senior Secretary, President's Office, 1961, 1963
MCCONNELL, FRANCES H.	Laboratory Technician A, Pathology-Parasitology, 1958
MCCULLERS, GAIL H.	Psychometrist, Student Counseling Service, 1961 B.S., Auburn University.
*McDERMITT, FLOYD P.	Laboratory Mechanician, Physics, 1963 B.S., Auburn University.

\* Temporary.

McKINLEY, MARY MILLER	Head Cashier, Business Office, 1938, 1959
MEADOWS, JAMES A.	Laboratory Mechanician, Textile Technology, 1962
MOON, BENJAMIN W.	Farm Foreman, Large Animal Surgery and Medicine, 1961
MOORE, CLARENCE TRUMAN	Laboratory Mechanician, Mechanical Engineering, 1962
MOORE, FRANKLIN D.	Education Training Specialist, Air Science, 1961
MULLINS, HAZEL M.	Senior Clerk, Buildings and Grounds, 1957, 1963
NESMITH, WOODIE R.	Assistant Construction Engineer, Buildings and Grounds, 1961, 1963
NIVEN, PAUL J.	Instructor, Naval Science, 1963
NORTON, KATHLEEN D.	Head Resident of Dormitory A, South Women's Dormitory, 1962
OLIVER, EDWARD E.	Small Arms Repairman, Military Science, 1963
*OLIVER, TOMMY GENE	Laboratory Mechanician, Physics, 1963
PATTERSON, RAYMOND A.	Senior Laboratory Mechanician, Industrial Laboratories, 1946, 1961
PEAK, BRUCE L.	Transportation Foreman, Buildings and Grounds, 1960
PETTY, JEAN GREENHILL	Senior Secretary, School of Education, 1955, 1959
PIERCE, JUDGE G.	Maintenance Custodian, Forest Hills Apartments, 1946, 1959
POLLARD, WILLIE E.	Senior Clerk, University Bookstore, 1959
POPE, LUTHER M.	Stockroom Supervisor, Buildings and Grounds, 1953, 1959
PRYOR, OLLIE CLYDE	Laboratory Mechanician, Textile Technology, 1960
PUGH, WILBUR H.	Property Custodian, Small Animal Surgery and Medicine, 1955, 1958
PUTNAM, ROBERT F.	Processing Mechanician, Textile Technology, 1959
RAGAN, MARTHA W.	Laboratory Technician A, Small Animal Surgery and Medicine, 1963
RAINEY, RUTH S.	Senior Secretary, Pharmacy, 1958, 1962
RAWLS, BYRON F.	Executive Secretary, F.F.A., 1959
B.S., M.S., Auburn University.	
RAY, LUTHER G.	Assistant Maintenance Custodian, Graves Centre Apartments, 1960
REW, CHARLES F.	Senior Clerk, Business Office, 1948, 1959
RIDDLE, RUBY L.	Senior Clerk, Infirmary, 1963
SELLERS, LEWIS L.	Assistant Supervisor of Vocational Agriculture, 1937, 1958
B.S., M.S., Auburn University.	
SEWELL, ANNIE MARIE	Head Resident of Teague Hall, 1942
A.B., Huntingdon College; M.S., Auburn University.	
SHELburne, KATE C.	Head Resident, Auburn Hall, 1951, 1963
B.S., M.S., Auburn University.	
SHERLING, DOROTHY N.	Senior Clerk, School of Science and Literature, 1951, 1959
B.S., Auburn University.	
SHYLOCK, THEODORE	Instructor, Military Science, 1963
SIBLEY, GRIGSBY THOMAS, JR.	Electronics Technician, Electrical Engineering, 1943, 1961
SIBLEY, KATE MAXWELL	Senior Tabulating Machine Operator, Registrar's Office, 1950, 1959
SILAVENT, EVIE	Head Resident of Mell Hall, 1958, 1962
SIMS, VIRGINIA V.	Assistant Cashier, Business Office, 1950
SMITH, IVERSON T.	Assistant Carpenter Foreman, Buildings and Grounds, 1957
SMITH, STARNES L.	Instructor, Naval Science, 1962
SMYTH, HENRY A.	Maintenance Mechanic, Buildings and Grounds, 1959, 1960
SNEED, MARY LOUISE	Bookkeeper, Business Office, 1960, 1962
SNOW, MELVIN L.	Janitor Foreman, Buildings and Grounds, 1951, 1957
SPARROW, SYLVIA S.	Senior Clerk, Engineering Administration, 1948, 1959
B.S., Alabama College.	
STANFIELD, JAMES MODIE	Cameraman, Duplicating, 1957

\* Temporary.

STOVER, ANN	Head Resident of Dowdell Hall and College Chaperone, 1952, 1957
STROUP, RUSH C.	Instructor, Military Science, 1963
SUDDATH, BOYCE E.	Senior Clerk, School of Education, 1944, 1959
SUGG, ETHEL J.	Head Resident and Counselor, South B.S., M.S., Auburn University. Women's Dormitories, 1957, 1962
SUGG, TOT C.	Housemother, Magnolia Dormitories, 1957, 1962
TAYLOR, EARLENE PANKEY	Senior Payroll Clerk, Business Office, 1961 B.B.A., Auburn University.
TAYLOR, WILKA B.	Senior Clerk, Buildings and Grounds, 1952, 1959
VALENTINE, SHARLOTT	Laboratory Technician A, Home Economics, 1963 B.S., Mississippi State College for Women.
VEACH, KENNETH R.	Senior Clerk-Typist, Military Science, 1963
WALDROP, RUTH C.	Assistant Purchasing Agent, Business Office, 1928, 1937
WEEKLEY, JOHN WITHERINGTON	Laboratory Mechanician, Aerospace Engineering, 1961
WHATLEY, MILDRED C.	Senior Payroll Clerk, Business Office, 1940, 1959
WHEELER, JOHN B.	Personnel and NESEP Yeoman, Naval Science, 1963
WHITE, JOSEPH A.	Assistant Supervisor of Vocational Agriculture, 1960 B.S., M.S., Auburn University.
WHITMAN, JESSIE C.	Assistant Campus Foreman, Buildings and Grounds, 1952, 1959
WILDER, ELIZABETH S.	Head Resident of Lane Hall, 1929, 1962
WILKERSON, FRANKIE L.	Senior Field Radio Repairman, Military Science, 1962
WILLIS, WOODROW	Maintenance Mechanic, Buildings and Grounds, 1963
WILSON, VERNA M.	Head Resident of Alumni Hall, 1960
WRIGHT, CARY DUNCAN	Property Custodian, Large Animal Surgery and Medicine, 1948, 1955
YOUNG, JOE FRANK	Laboratory Mechanician, Mechanical Engineering, 1960
ZARING, MARGARET K.	Head Resident of Keller Hall, 1958 B.S., Northwestern University.
ZIEGLER, EVELYN A.	Senior Clerk, School of Science and Literature, 1951, 1959

# AGRICULTURAL EXPERIMENT STATION STAFF<sup>1</sup>

RALPH BROWN DRAUGHON, B.S., M.S., LL.D., L.H.D., LL.D., *President*

ROBERT C. ANDERSON, B.S., M.A., Ph.D., *Executive Vice-President*

E. V. SMITH, B.S., M.S., Ph.D., *Director*

COYT WILSON, B.S., M.S., Ph.D., *Associate Director*

C. F. SIMMONS, B.S., M.S., Ph.D., *Assistant Director*

W. H. WEIDENBACH, B.S., *Assistant to Director*

## Agricultural Economics

LANHAM, BEN T., JR. *Head of Department, 1939, 1956*  
B.S., Clemson College; M.S., University of Tennessee; Ph.D., Michigan State University.

BLACKSTONE, J. H. *Professor, 1938, 1953*  
B.S., M.S., Auburn University.

DANNER, M. J. *Professor, 1943, 1957*  
B.S., Texas Technological College; M.S., University of Tennessee.

STRICKLAND, P. L., JR. *Agricultural Economist (Coop. USDA), 1962*  
B.S., North Carolina State College; M.S., Ph.D., Oklahoma State University.

WHITE, MORRIS *Professor, 1950, 1960*  
B.S., Auburn University; M.S., Ph.D., Purdue University.

YEAGER, J. H. *Professor, 1946, 1957*  
B.S., M.S., Auburn University; Ph.D., Purdue University.

KERN, E. E., JR. *Associate Professor, 1955*  
B.S., M.S., Louisiana State University.

PARTENHEIMER, E. J. *Associate Professor, 1958*  
B.S., M.S., Purdue University; Ph.D., Michigan State University.

WILSON, LOWELL E. *Associate Professor, 1960, 1963*  
B.S., Murray State College; M.S., University of Kentucky; Ph.D., University of Illinois.

DUNKELBERGER, J. E. *Assistant Professor, 1962*  
A.B., Franklin and Marshall College; M.S., Pennsylvania State University.

MILLER, B. R. *Assistant Professor, 1963*  
B.S., M.S., Auburn University.

\*HAMMETT, RUTH A. *Instructor, 1955*  
B.S., M.S., Auburn University.

\*MCMANUS, BENNY R. *Instructor, 1960*  
B.S., M.S., Auburn University.

## Agricultural Engineering

KUMMER, F. A. *Head of Department (P.E.), 1935, 1948*  
B.S., M.S., Auburn University.

COOPER, A. W. *Director, National Tillage Machinery Laboratory, (P.E.) (Coop. USDA), 1939, 1958*  
B.S., M.S., Auburn University; Ph.D., Michigan State University.

CORLEY, T. E. *Professor (P.E.), 1946, 1963*  
B.S., M.S., Auburn University.

DUMAS, W. T. *Associate Professor (P.E.), 1946, 1962*  
B.S., M.S., Auburn University.

GRUB, WALTER *Associate Professor, 1954*  
B.S., Rutgers University; M.S., Cornell University.

RENOLL, E. S. *Associate Professor (P.E.), 1949, 1958*  
B.S., Auburn University; M.S., Iowa State University.

ROLLO, C. A. *Associate Professor (P.E.), 1947, 1956*  
B.S., M.S., Auburn University.

STOKES, C. M. *Associate Professor (P.E.), 1937, 1947*  
B.S., M.S., Auburn University.

GILL, W. R. *Soil Scientist (Coop. USDA), 1955*  
B.S., Pennsylvania State University; M.S., University of Hawaii; Ph.D., Cornell University.

MCCREERY, W. F. *Agricultural Engineer (Coop. USDA), 1950, 1952*  
B.S., University of Georgia; M.S., Auburn University.

REAVES, C. A. *Agricultural Engineer (Coop. USDA) (P.E.), 1951*  
B.S., Auburn University; M.S., University of Missouri.

<sup>1</sup> As of January 1, 1964.

\* Temporary.

OSBORN, JAMES E.	Assistant Professor, 1964
B.S., M.S., Oklahoma State University.	
REED, I. F.	Agricultural Engineer (Coop. USDA) (P.E.), 1933, 1944
B.S., A.E., University of Nebraska; M.S., Ohio State University.	
TAYLOR, J. H.	Agricultural Engineer (Coop. USDA), 1962
B.S., Mississippi State University.	
VANDEN BERG, G. E.	Agricultural Engineer (Coop. USDA), 1958
B.S., South Dakota State College; M.S., Ph.D., Michigan State University.	
HENDRICK, J. C.	Assistant Professor, 1962
B.S., M.S., Auburn University.	
EAGAR, T. N.	Instructor, 1959
B.S., Auburn University.	
SMITH, D. M.	Agricultural Engineering Field Superintendent, 1962
B.S., Auburn University.	
<b>Agronomy and Soils</b>	
ROGERS, HOWARD T.	Head of Department, 1942, 1951
B.S., Virginia Polytechnic Institute; M.S., Michigan State University; Ph.D., Iowa State University.	
COPE, J. T., JR.	Professor, 1950, 1959
B.S., M.S., Auburn University; Ph.D., Cornell University.	
DONNELLY, E. D.	Professor, 1951, 1959
B.S., M.S., Auburn University; Ph.D., Cornell University.	
ENSMINGER, L. E.	Professor, 1944, 1953
B.S., University of Missouri; Ph.D., University of Illinois.	
MCCAIN, F. S.	Professor, 1946, 1959
B.S., M.S., Auburn University; Ph.D., Purdue University.	
MINTON, EARL B.	Plant Pathologist (Coop. USDA), 1950, 1956
B.S., M.S., Auburn University.	
PEARSON, R. W.	Soil Chemist (Coop. USDA), 1941, 1960
B.S., M.S., Mississippi State University; Ph.D., University of Wisconsin.	
ROUSE, R. D.	Professor, 1949, 1956
B.S., M.S., University of Georgia; Ph.D., Purdue University.	
SCARSBROOK, C. E.	Professor, 1953, 1959
B.S., Auburn University; Ph.D., North Carolina State College.	
SMITH, A. L.	Pathologist (Coop. USDA), 1946
B.S., Oklahoma State University; M.S., University of Arkansas; Ph.D., University of Wisconsin.	
STURKIE, D. G.	Professor, 1925, 1942
B.S., Auburn University; M.S., Iowa State University; Ph.D., Michigan State University.	
WEAR, J. I.	Professor, 1939, 1959
B.S., M.S., Auburn University; Ph.D., Purdue University.	
ADAMS, FRED	Associate Professor, 1955
B.S., M.S., Louisiana State University; Ph.D., University of California.	
DIXON, JOE B.	Associate Professor, 1959, 1962
B.S., M.S., University of Kentucky; Ph.D., University of Wisconsin.	
EVANS, E. M.	Associate Professor, 1949, 1953
B.S., Auburn University; M.S., Cornell University.	
HILTBOLD, A. E.	Associate Professor, 1955
B.S., Cornell University; M.S., Iowa State University; Ph.D., Cornell University.	
HOVELAND, CARL S.	Associate Professor, 1959
B.S., M.S., University of Wisconsin; Ph.D., University of Florida.	
JOHNSON, WILEY C., JR.	Associate Professor, 1957
B.S., Wake Forest College; B.S., M.S., North Carolina State College; Ph.D., Cornell University.	
MIXON, AUBREY C.	Associate Agronomist (Coop. USDA), 1957
B.S., University of Georgia; M.S., North Carolina State College.	
PATTERSON, R. M.	Associate Professor, 1949, 1956
B.S., M.S., University of Florida; Ph.D., Pennsylvania State University.	
EVANS, C. E.	Assistant Professor, 1955, 1957
B.S., Abilene Christian College; M.S., Auburn University.	
**KING, C. C., JR.	Assistant Professor, 1952, 1954
B.S., M.S., Auburn University.	
SEARCY, V. S.	Assistant Professor, 1948, 1950
B.S., M.S., Auburn University.	

SHARMAN, G. T., JR.	Assistant Professor (Thorsby), 1952, 1954
B.S., Auburn University.	
BERTRAM, F. E.	Field Superintendent (Prattville), 1935, 1948
B.S., Auburn University.	
GLAZE, FRED T.	Field Superintendent (Alexandria), 1954
B.S., Auburn University.	
LANGFORD, J. W.	Superintendent Plant Breeding Unit (Tallasse), 1954
B.S., Auburn University.	
RICHARDSON, J. W.	Field Superintendent (Brewton), 1937, 1948
B.S., Auburn University.	
**CHAPMAN, LOUIE J.	Instructor, 1954
B.S., M.S., Auburn University.	
JORDAN, C. W.	Instructor, 1961
B.S., Louisiana State University.	
WEBSTER, H. L.	Instructor, 1961
B.S., Auburn University.	

**Animal Disease Research**

GREENE, J. E.	Head of Department <sup>a</sup> , 1937, 1958
D.V.M., M.S., Auburn University.	
CLARK, CARL	Associate Head of Department <sup>a</sup> , 1953, 1959
B.S., D.V.M., Washington State University; M.Sc., Ph.D., Ohio State University.	
KIESEL, GEORGE K.	Professor, 1952, 1955
B.S., Rutgers University; D.V.M., New York State Veterinary College.	
ROBERTS, CHARLES S.	Professor <sup>a</sup> , 1947, 1954
D.V.M., Auburn University; M.S., Michigan State University.	
ALEXANDER, HERMAN D.	Associate Professor, 1950, 1963
B.S., M.S., Ph.D., Auburn University.	
FARNELL, DANIEL R.	Associate Professor, 1962
D.V.M., M.S., Auburn University.	

**Animal Science**

WARREN, W. M.	Head of Department, 1955, 1957
B.S., Michigan State University; M.S., Texas A. & M. College; Ph.D., University of Missouri.	
ANTHONY, W. B.	Professor, 1953, 1955
B.S., University of Illinois; M.S., Texas A. & M. College; Ph.D., Cornell University.	
PRICKETT, C. O.	Professor, 1962
B.S., University of New Hampshire; D.V.M., Auburn University.	
SALMON, W. D.	Professor, 1922, 1957
B.S., University of Kentucky; M.S., University of Missouri; Sc.D., University of Kentucky.	
HARUS, RALPH R.	Associate Professor, 1960, 1963
B.S., M.S., Auburn University; Ph.D., Texas A. & M. College.	
PATTERSON, TROY B.	Associate Professor, 1957
B.S., Mississippi State University; M.S., Ph.D., Texas A. & M. College.	
SMITH, R. C.	Assistant Animal Nutritionist, 1961, 1963
B.S., Elmhurst College; M.S., Ph.D., University of Illinois College of Medicine.	
SQUIERS, C. D.	Associate Professor, 1950
B.S., M.A., Ph.D., University of Missouri.	
STRENGTH, D. R.	Associate Professor, 1961
B.S., M.S., Auburn University; Ph.D., Cornell University.	
TUCKER, H. F.	Associate Professor, 1949, 1962
B.S., M.S., Ph.D., Auburn University.	
TURNER, D. M.	Associate Professor, 1940, 1962
B.S., Auburn University; M.S., University of Illinois.	
WIGGINS, E. L.	Associate Professor, 1956
B.S., M.S., Oklahoma State University; Ph.D., University of Wisconsin.	
HUFFMAN, DALE L.	Assistant Professor, 1963
B.S., Cornell University; M.S., Ph.D., University of Florida.	
MEADOWS, G. B.	Assistant Professor, 1951
B.S., Auburn University; M.S., University of Florida.	
PRICE, JAMES F.	Assistant Animal Scientist, 1960, 1962
B.S., University of Tennessee; M.S., Ph.D., Michigan State University.	

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\*\* On leave.



MERSMANN, HARRY J.	<i>Instructor, 1963</i>
B.S., Ph.D., St. Louis University.	
NIX, R. R.	<i>Instructor, 1961</i>
B.S., Auburn University.	

**Botany and Plant Pathology**

LYLE, J. A.	<i>Head of Department, 1947, 1954</i>
B.S., University of Kentucky; M.S., North Carolina State College; Ph.D., University of Minnesota.	
CAIRNS, E. J.	<i>Professor, 1954</i>
B.A., M.A., California (U.C.L.A.); Ph.D., University of Maryland.	
DAVIS, D. E.	<i>Professor, 1947, 1955</i>
B.Ed., Ph.D., Eastern Illinois University; M.S., Ph.D., Ohio State University.	
DIENER, U. L.	<i>Associate Professor, 1952, 1963</i>
B.A., Miami University (Ohio); M.A., Harvard University; Ph.D., North Carolina State College.	
MINTON, N. A.	<i>Nematologist (Coop. USDA), 1951, 1955</i>
B.S., M.S., Ph.D., Auburn University.	
CLARK, E. M.	<i>Associate Professor, 1956, 1960</i>
B.S., M.S., Ph.D., University of Minnesota.	
CURL, E. A.	<i>Associate Professor, 1954, 1957</i>
B.S., Louisiana Polytechnic Institute; M.S., University of Arkansas; Ph.D., University of Illinois.	
DAVIS, NORMAN D.	<i>Associate Professor, 1958, 1961</i>
B.S., University of Georgia; M.S., Ph.D., Ohio State University.	
FUNDERBURK, H. H., JR.	<i>Associate Professor, 1961, 1963</i>
B.S., M.S., Auburn University; Ph.D., Louisiana State University.	
GUDAUSKAS, ROBERT T.	<i>Assistant Professor, 1960, 1963</i>
B.S., East Illinois State College; M.S., Ph.D., University of Illinois.	

**Dairy Science**

AUTREY, K. M.	<i>Head of Department, 1947</i>
B.S., Louisiana State University; M.S., Ph.D., Iowa State University.	
CANNON, R. Y.	<i>Professor, 1948, 1960</i>
B.S., Iowa State University; M.S., Ohio State University; Ph.D., University of Wisconsin.	
HAWKINS, G. E., JR.	<i>Professor, 1952, 1959</i>
B.S., Western Kentucky College; M.S., University of Georgia; Ph.D., North Carolina State College.	
ROLLINS, G. H.	<i>Associate Professor, 1948, 1955</i>
B.S., M.S., Virginia Polytechnic Institute; Ph.D., University of Illinois.	
LITTLE, JOE ALLEN	<i>Instructor, 1959, 1962</i>
B.S., Western Kentucky State College.	
PAAR, GARY E.	<i>Instructor, 1960</i>
B.S., Wisconsin State College; M.S., Iowa State University.	

**Forestry**

DEVALL, WILBUR B.	<i>Head of Department, 1946, 1951</i>
B.S., Syracuse University; M.S., University of Florida.	
GARIN, G. I.	<i>Professor, 1948, 1952</i>
B.S., M.S., University of Idaho; Ph.D., Yale University.	
GOGGANS, J. F.	<i>Professor, 1947, 1963</i>
B.S., University of Georgia; M.F., Duke University; Ph.D., North Carolina State College.	
HODGKINS, E. J.	<i>Professor, 1952, 1957</i>
B.S., Michigan State University; M.S., University of California; Ph.D., Michigan State University.	
RICHARDS, D. B.	<i>Professor, 1951</i>
B.S., Colorado State University; M.S., Ph.D., Syracuse University.	
JOHNSON, E. W.	<i>Associate Professor, 1950, 1957</i>
B.S., University of New Hampshire; M.F., Yale University; Ph.D., Syracuse University.	
POSEY, H. G.	<i>Associate Professor, 1950, 1959</i>
B.S.F., M.S.F., North Carolina State College.	
WHIPPLE, S. D.	<i>Associate Professor (Rt. 2, Fayette), 1958</i>
B.S., M.F., University of Michigan.	
BEALS, HAROLD O.	<i>Assistant Professor, 1960</i>
B.S.F., M.S., Ph.D., Purdue University.	
CARTER, MASON C.	<i>Assistant Professor, 1960</i>
B.S., M.S., Virginia Polytechnic Institute; D.F., Duke University.	

DEBRUNNER, L. E.	Assistant Professor, 1961
B.S., University of Cincinnati; M.F., Yale University.	
LIVINGSTON, K. W.	Assistant Professor, 1948, 1949
B.S., University of South Carolina; M.F., Duke University.	
LYLE, E. S., JR.	Assistant Professor, 1957
B.S., University of Georgia; M.F., Duke University.	
STEENSEN, D. H. J.	Assistant Professor, 1960
B.S., Iowa State University; M.F., Duke University.	

### Home Economics

SPIDLE, MARION W.	Head of Department*, 1938, 1955
B.S., Alabama College; B.S., M.A., Columbia University.	
ROSE, EITHEL	Professor*, 1963
B.S., M.S., Indiana State College; Ph.D., Ohio State University.	
PRATHER, MARY E.	Associate Professor*, 1952, 1963
B.S., M.S., Auburn University; Ph.D., Iowa State University.	
VAN DE MARK, MILDRED S.	Associate Professor*, 1938, 1955
B.S., Auburn University; M.A., Columbia University.	
MORTON, SUE B.	Assistant Professor*, 1962
B.S., M.S., Ph.D., Texas Woman's University.	

### Horticulture

WARE, L. M.	Head of Department, 1923, 1931
B.S., M.S., Auburn University.	
FURUTA, TOKUJI	Professor, 1951, 1962
B.S., M.S., Ph.D., Ohio State University.	
GREENLEAF, W. H.	Professor, 1947
B.S., Ph.D., University of California at Berkeley.	
ORR, HENRY P.	Professor, 1947, 1962
B.S., Auburn University; M.S., Ph.D., Ohio State University.	
AMLING, HARRY J.	Associate Professor, 1958
B.S., Rutgers University; M.S., University of Delaware; Ph.D., Michigan State University.	
HARRIS, HUBERT	Associate Professor, 1936, 1948
B.S., M.S., Auburn University.	
JONES, SAM T.	Associate Professor, 1950, 1954
B.S., M.S., Auburn University; Ph.D., Louisiana State University.	
JOHNSON, W. A.	Assistant Professor, 1937, 1950
B.S., M.S., Auburn University.	
NORTON, JOSEPH D.	Assistant Professor, 1960
B.S., M.S., Auburn University; Ph.D., Louisiana State University.	
MARTIN, W. C., JR.	Instructor, 1951, 1958
B.S., Auburn University.	
PERRY, FREDERICK B., JR.	Instructor, 1957
B.S., M.S., Auburn University.	
TURNER, JACK L.	Instructor, 1955, 1959
B.S., M.S., Auburn University.	

### Poultry Science

MOORE, CLAUDE H.	Head of Department, 1956, 1959
B.S., Auburn University; M.S., Kansas State University; Ph.D., Purdue University.	
COTTIER, G. J.	Professor, 1930, 1949
B.S., Auburn University; M.S., University of Missouri; D.V.M., Auburn University.	
EDGAR, S. A.	Professor, 1947, 1950
A.B., Sterling College; M.S., Kansas State University; Ph.D., University of Wisconsin.	
KING, DALE F.	Professor, 1930, 1959
B.S., Oregon State University; M.S., Kansas State University.	
GOODMAN, J. G.	Associate Professor, 1939, 1946
B.S., M.S., Auburn University.	
HOWES, JAMES R.	Associate Professor, 1960, 1963
B.S.C., University, London; N.D.A., University, Edinburgh; M.S.C., McGill University, Montreal.	
JOHNSON, L. W.	Associate Professor, 1948, 1955
A.B., Cornell University; M.S., Auburn University; Ph.D., Texas A. & M. College.	

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- \*CHO, YUNG.....Instructor, 1963  
B.S., Vet. Med. National Taiwan University; M.S., Auburn University.
- MORA, E. C.....Associate Professor, 1958, 1961  
B.S., University of New Mexico; M.S., New Mexico State University; Ph.D., Kansas State University.

### Publications

- CRAWFORD, E. M.....Director, University Relations, 1962  
B.S., Auburn University.
- ROY, K. B.....Head of Department, 1943, 1948  
B.J., University of Missouri.
- MCGRAW, E. L.....Associate Editor, 1941, 1957  
B.S., M.S., Auburn University.
- STEVENSON, R. E.....Associate Editor, 1955, 1960  
B.S., Auburn University.

### Research Data Analysis

- ALVORD, B. F.....Statistician, 1929, 1957  
B.S., M.S., University of Illinois.

### Zoology-Entomology

- ARANT, F. S.....Head of Department, 1926, 1949  
B.S., M.S., Auburn University; Ph.D., Iowa State University.
- BAKER, M. F.....Leader, Wildlife Research Unit (Coop. USDI), 1958  
B.S., M.S., Iowa State University; Ph.D., University of Kansas.
- DENDY, J. S.....Professor, 1947, 1957  
B.S., Presbyterian College; M.A., University of North Carolina; Ph.D., Michigan State University.
- EDEN, W. G.....Professor, 1940, 1953  
B.S., M.S., Auburn University; Ph.D., University of Illinois.
- LAWRENCE, J. M.....Professor, 1941, 1963  
B.S., M.A., Auburn University; Ph.D., Iowa State University.
- SWINGLE, H. S.....Professor, 1929, 1939  
B.S., M.S., Sc.D., Ohio State University.
- BERGER, ROBERT S.....Associate Professor, 1963  
B.S., M.S., Texas A. & M. College; Ph.D., Cornell University.
- HAYS, KIRBY LEE.....Associate Professor, 1957, 1960  
B.S., M.S., Auburn University; Ph.D., University of Michigan.
- HYCHE, LACY L.....Associate Professor, 1952, 1960  
B.S., M.S., Auburn University.
- IVEY, W. D.....Associate Professor, 1947, 1962  
B.S., M.S., Auburn University; Ph.D., Emory University.
- PRATHER, E. E.....Associate Professor, 1941, 1950  
B.S., Auburn University; M.S., Michigan State University.
- ALLISON, RAY.....Associate Professor, 1950, 1962  
B.S., Western Carolina College; M.S., North Carolina State College; Ph.D., Louisiana State University.
- BASS, MAX H.....Assistant Professor, 1957, 1963  
B.S., Troy State College; M.S., Auburn University.
- SHELL, E. WAYNE.....Assistant Professor, 1952, 1959  
B.S., M.S., Auburn University; Ph.D., Cornell University.
- SPEAKE, DAN W.....Assistant Leader, Wildlife Research Unit  
B.S., M.S., Auburn University. (Coop. USDI), 1955
- WATSON, THEO F.....Assistant Professor, 1962  
B.S., M.S., University of Arkansas; Ph.D., University of California at Berkeley.
- BEASLEY, P. C.....Instructor, 1960  
B.S., Washington University at St. Louis; M.S., Auburn University.
- CANERDAY, THOMAS D.....Instructor, 1963  
B.S., M.S., Auburn University.
- GREENE, GEORGE N.....Instructor, 1963  
B.S., Rice University; M.S., University of Michigan.
- SHOEMAKER, JON P.....Instructor, 1963  
B.S., M.A., Western Michigan University.
- SMITHERMAN, R. O.....Instructor, 1961  
B.S., Auburn University; M.S., North Carolina State College.

\* Temporary.

## SUBSTATIONS

**Black Belt—Marion Junction, Dallas County**

SMITH, L. A.	Superintendent, 1951, 1957
B.S., Auburn University.	
GRIMES, HAROLD W., JR.	Assistant Superintendent, 1955, 1957
B.S., M.S., Auburn University.	

**Chilton Area Horticulture—Clanton, Chilton County**

CARLTON, C. C.	Superintendent, 1948
B.S., Auburn University.	
SHORT, KENNETH C.	Assistant Superintendent, 1960
B.S., Auburn University.	

**Gulf Coast—Fairhope, Baldwin County**

YATES, HAROLD F.	Superintendent, 1931, 1959
B.S., Auburn University.	
BARRETT, J. E., JR.	Assistant Superintendent, 1948
B.S., Auburn University.	

**Lower Coastal Plain—Camden, Wilcox County**

BROWN, V. L.	Superintendent, 1949
B.S., Mississippi State University.	
WATSON, W. J.	Assistant Superintendent, 1958
B.S., Auburn University.	

**North Alabama Horticulture—Cullman, Cullman County**

HOLLINGSWORTH, M. H.	Superintendent, 1958, 1962
B.S., Auburn University.	

**Piedmont—Camp Hill, Tallapoosa County**

MAYTON, E. L.	Superintendent, 1929, 1945
B.S., Auburn University; M.S., University of Vermont.	
SANDY, J. M.	Assistant Superintendent, 1961
B.S., Auburn University.	

**Sand Mountain—Crossville, DeKalb County**

GISENDANNER, S. E.	Superintendent, 1941, 1946
B.S., Auburn University.	
LESTER, HOWARD C.	Assistant Superintendent, 1958
B.S., Auburn University.	

**Tennessee Valley—Belle Mina, Limestone County**

BOSECK, J. K.	Superintendent, 1937, 1954
B.S., Auburn University.	
IVEY, H. W., II	Assistant Superintendent, 1960
B.S., Auburn University.	

**Upper Coastal Plain—Winfield, Fayette County**

COTNEY, W. W.	Superintendent, 1944
B.S., Auburn University.	
MOORE, ROBERT A., JR.	Assistant Superintendent, 1959
B.S., Auburn University.	

**Wiregrass—Headland, Henry County**

BROGDEN, C. A.	Superintendent, 1937, 1950
B.S., Auburn University.	
**SCONYERS, MAX C.	Assistant Superintendent, 1950
B.S., Auburn University.	
STARLING, J. G.	Assistant Superintendent, 1948
B.S., Auburn University.	

**Ornamental Horticulture Field Station—Spring Hill, Mobile County**

SELF, R. L.	Plant Pathologist, 1942, 1952
B.S., M.S., Auburn University; Ph.D., University of Wisconsin.	

\*\* On leave.

## OTHER STAFF

ADKINS, W. P.	Shop Foreman, Agricultural Engineering, 1947
BATCHELOR, IRIS RAINS	Laboratory Tech. A, Dairy Science, 1963
BLACK, A. L.	Ponds Foreman, Zoology-Entomology, 1948
BONNETT, SARA L.	Laboratory Tech. A, Animal Science, 1963
BRADLEY, GLENDA G. B.S., Auburn University.	Laboratory Tech. A, Poultry Science, 1962
CLEMENTS, CAROLE	Laboratory Tech. A, Dairy Science, 1960, 1963
COLLUM, DOVARD R.	Technical Assistant, Agronomy and Soils, 1957
CROW, PAUL ELMER B.S., Auburn University.	Tech. Assistant, Animal Science, 1961
DIXON, GWENDOLYN FAYE	Lab. Tech. A, Home Econ. Research, 1962
DUCK, BARBARA ANN B.S., University of Tennessee.	Lab. Tech. A, Animal Science, 1962
DUMAS, PATRICIA TALLEY R.N., Duke University School of Nursing.	Lab. Tech. A, Animal Science, 1962
ELLINGTON, CLAUDE S.	Asst. Ponds Foreman, Zoology-Entomology, 1962
ELLIS, JANICE J.	Lab. Tech. A, Agronomy and Soils, 1957, 1959
ELLIS, MATTIE NORMAN	Senior Secretary, Administration, 1935, 1959
FINCHER, STALEY E. B.S., Auburn University.	Farm Foreman, Poultry Science, 1959
FLANAGAN, CORNELIA S.	Senior Lab. Tech., Poultry Science, 1942, 1961
GRAY, FLORENCE S.	Laboratory Tech. A, Poultry Science, 1961
GREEN, ANNELESE M.	Lab. Tech. A, Animal Science, 1962
GRITZ, INEZ B. B.A., M.S., Auburn University.	Lab. Tech. A, Home Econ. Research, 1957, 1961
HEARN, WILLIAM H. B.S., Auburn University.	Systems Analyst, 1950, 1963
HIGGINS, J. H.	Production Manager (Foundation Seed Stocks Farm at Thorsby) Agronomy and Soils, 1963
HORNE, ELEANOR	Senior Clerk, Agronomy and Soils, 1922, 1959
HUNTER, ROBERT C. B.S., Auburn University.	Tech. Asst., Zoology-Entomology, 1960, 1962
JONES, JACKIE M.	Laboratory Tech. A, Poultry Science, 1962
JONES, LESLIE J.	Farm Foreman, Agronomy and Soils, 1959
KIRTLAND, FRANCES ANN R.N., Mobile Infirmary.	Laboratory Tech. A, Animal Science, 1963
LANCASTER, MAYO	Assistant Foreman, Dairy Science, 1952, 1957
LANE, H. M.	Farm Foreman, Horticulture, 1921, 1946
MANSFIELD, E. E.	Chief Clerk, Agricultural Economics, 1939, 1959
MATHISON, M. C.	Farm Foreman, Dairy Science, 1942, 1957
NORTHCUTT, DEWEY V.	Herdsmen, Animal Science, 1962
PATE, AUBRA J. B.S., Auburn University.	Laboratory Tech. A, Botany and Plant Path., 1963
PETERSEN, INGE E.	Laboratory Tech. A, Animal Science, 1963
PHILLIPS, MARGARET GIBSON	Laboratory Tech. A, Forestry, 1962, 1963
ROBERTS, ANNETTE C. B.S., Auburn University.	Laboratory Tech. A, Botany and Plant Pathology, 1961
ROTHE, EVELYN STAGGERS B.S., Auburn University.	Laboratory Tech. A, Animal Science, 1962
SCHLESINGER, HELEN F.	Laboratory Tech. A, Animal Science, 1963
TOMLIN, JUDY G. B.S., Auburn University.	Laboratory Tech. A, Animal Science, 1962
VALENTINE, SHARLOTT A.	Laboratory Tech. A, Home Econ., 1963
WILLIAMS, NANCY K. B.S., Auburn University.	Laboratory Tech. A, Botany and Plant Pathology, 1958, 1961

# AGRICULTURAL EXTENSION SERVICE STAFF

RALPH BROWN DRAUGHON, B.S., M.S., LL.D., L.H.D., LL.D.

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ROBERT ANDERSON, B.S., M.A., Ph.D.

*Executive Vice-President*

Fred R. Robertson, Jr., B.S., M.S., University of Tennessee; DPA  
Harvard University \_\_\_\_\_ Director, 1959, 1962  
Ralph R. Jones, B.S., Auburn University; M.S., Michigan State Uni-  
versity \_\_\_\_\_ Associate Director, 1936, 1962  
R. M. Reaves, B.S., Auburn University \_\_\_\_\_ Assistant to the  
Director, Field Service, 1927, 1962  
W. H. Taylor, B.S., Auburn University; M.S., Ed.D., Cornell University  
Assistant to the Director, Rural Resource Development, 1946, 1962  
Hoyt M. Warren, B.S., Auburn University; M.S., Ed.D., Cornell Uni-  
versity \_\_\_\_\_ Assistant to the Director, Programs, 1945, 1961  
Mrs. Mary E. Coleman, B.S., Auburn University; M.A., Columbia Uni-  
versity \_\_\_\_\_ State Home Demonstration Agent, 1936, 1958  
H. Earle Williams, A.B., Birmingham-Southern College \_\_\_\_\_ Head,  
Management Service, 1945, 1960  
Edwin M. Crawford, B.S., Auburn University \_\_\_\_\_ Director of  
University Relations, 1962

## SUPERVISORS

John C. Bullington, B.S., Auburn University \_\_\_\_\_ District Agent, 1939, 1962  
S. L. Davis, B.S., Auburn University; M.S., Cornell University \_\_\_\_\_  
District Agent, 1942, 1961  
T. W. Lumpkin, B.S., Auburn University \_\_\_\_\_ District Agent, 1934, 1941  
Geo. D. H. McMillan, B.S., Auburn University \_\_\_\_\_ District Agent, 1942, 1961  
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District Home Dem. Agent, 1941, 1958  
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District Home Dem. Agent, 1949, 1957  
Lucile Mallette, B.S., Auburn University; M.S., University of Minnesota  
District Home Dem. Agent, 1936, 1941  
Mrs. Patty Parkman, B.S., Alabama College \_\_\_\_\_ District Home  
Demonstration Agent, 1947, 1952

## DIVISION CHAIRMEN

John Warren Gossett, B.S., University of Tennessee; M.S., Ph.D., Texas  
A. & M. College \_\_\_\_\_ Chairman, Animal Science Division, 1962  
Thomas Benjamin Hagler, B.S., M.S., Auburn University; Ph.D.,  
University of Maryland \_\_\_\_\_ Chairman, Plant Science Division, 1960

## SPECIALISTS

O. N. Andrews, B.S., M.S., Auburn University \_\_\_\_\_ Agronomist, 1942, 1955  
John Bagby, B.S., V. P. I. \_\_\_\_\_ Specialist in Commercial Horticulture, 1944, 1949  
Ralph J. Ballew, B.S., Auburn University; M.S., Michigan State Uni-  
versity \_\_\_\_\_ Visual Editor, 1954, 1961  
Ann Barr, B.S., Alabama College \_\_\_\_\_ State 4-H Club Leader for Girls, 1945, 1950  
Sidney Bell, B.S., M.S., Auburn University; Ph.D., Michigan State U.  
Specialist in Farm Management, 1960  
A. J. Brown, B.S., M.S., Auburn University \_\_\_\_\_ Specialist in  
Marketing, 1948, 1963  
Elizabeth Bryan, B.S., Auburn University; M.S., University of Tenn.  
Extension Economist, Home Management, 1939, 1957  
M. D. Bond, B.S., M.S., Auburn University \_\_\_\_\_ Peanut and  
Soybean Specialist, 1955, 1960  
Charles Allen Black, B.A.A., Auburn University \_\_\_\_\_ Assistant Art Editor, 1962  
James R. Buttram, B.S., M.S., Mississippi State University; Ph.D.,  
Auburn University \_\_\_\_\_ Entomologist, 1961  
A. R. Cavender, B.S., M.S., University of Tennessee; Ph.D., University  
of Wisconsin \_\_\_\_\_ Specialist in Meat Marketing, 1958, 1960  
Walter K. Cheney, B.A.A., Auburn University \_\_\_\_\_ Art Editor, 1958, 1962



R. R. Chesnutt, B.S., Auburn University	Agricultural Editor, 1941, 1948
Robert R. Clark, B.S., M.S., Auburn University	Specialist, Rural Resource Development, 1954, 1961
**Kenneth J. Copeland, B.S., Auburn University	News Editor, 1957, 1960
William T. Cox, B.S., Auburn University	Specialist in Farm Buildings, 1950, 1951
S. R. Doughty, B.S., Iowa State University	Specialist, Farm Management, 1923, 1962
Isabelle Downey, B.S., Auburn University; M.S., University of Georgia	Specialist in Food Preservation, 1944, 1958
Samuel E. Eich, Jr., B.S., Auburn University	Specialist, Rural Resource Development, 1957, 1962
John Elliott, Jr., B.S., Auburn University	District Program Specialist, 1953, 1963
Lawrence Ennis, B.S., Auburn University	Registered P. E., State of Alabama; Specialist in Soil Engineering, 1945, 1949
J. T. Gaillard, B.S., Auburn University	Registered P. E., State of Alabama; Specialist in Farm Mechanization, 1944, 1949
Joseph P. Givhan, B.S., Auburn University	Specialist, Rural Resource Development, 1935, 1963
M. R. Glasscock, B.S., Auburn University	Specialist in Fruits and Vegetable Marketing, 1941, 1962
George Glen Green, B.S., M.S., Oklahoma State University; Ph.D., Texas A. & M. College	Extension Animal Husbandman, 1963
Billy Ray Gregg, B.S., M.S., Mississippi State University	Agronomist, Seed, 1964
Albert C. Heaslett, B.S., Auburn University; M.S., University of Tennessee	Specialist, Tributary Area Development, 1957, 1963
J. B. Henderson, B.S., M.S., Auburn University	Specialist in Cotton, 1960, 1963
Foy Helms, B.S., Auburn University	Agricultural Economist, 1943, 1949
Robert C. Horn, B.S., Auburn University; M.S., University of Wisconsin	Specialist, Rural Resource Development, 1944, 1961
J. R. Hubbard, B.S., Auburn University; M.S., Cornell University	Specialist in Poultry, 1939, 1960
John M. Huie, B.S., M.S., Auburn University	Specialist, Rural Resource Development, 1962
R. S. Jones, Jr., B.S., Auburn University	Dairyman, 1941, 1959
Troy Keeble, B.S., M.S., Auburn University	Specialist in Ornamental Horticulture, 1958
E. F. Kennamer, B.S., M.S., Auburn University	Specialist in Wildlife, 1940, 1960
Worth Lanier, B.S., Mississippi State University; DVM, Auburn University	Extension Veterinarian, 1960
Roy J. Ledbetter, B.S., M.S., Auburn University	Entomologist, 1954, 1962
James Gordon Link, B.S., M.S., Auburn University	Agronomist, 1959, 1963
Daniel A. Linton, Jr., B.S., M.S., Auburn University	Specialist in Livestock Marketing, 1962
H. E. Logue, B.S., M. of Ag. Educ., Auburn University	State 4-H Club Leader, 1942, 1948
Norman E. McGlohon, B.S., M.S., Clemson College; Ph.D., N.C. State College	Plant Pathologist-Nematologist, 1961
Houston Frank McQueen, B.S., Auburn University	Survey Entomologist, 1963
C. L. Maddox, B.S., M.S., Auburn University	Specialist in Farm Management, TVA, 1954, 1960
Elta Majors, B.S., Auburn University; M.S., University of Tennessee	Specialist in Child Care and Family Life, 1934, 1940
Herman H. Marks, B.S., Auburn University	District Program Specialist, 1954, 1963
M. Cecil Mayfield, B.S., Auburn University	4-H Club Specialist, 1955, 1961
I. R. Martin, B.S., M.S., LSU	Extension Forester, 1941, 1948
J. Glenn Morrill, B.S., Brigham Young University; M.S., Utah State University; Ed.D., Cornell University	Specialist in Extension Training and Development, 1960
Dorothy Overbey, B.S., University of Tennessee	Specialist in Consumer Education, 1943, 1949

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Carl Parker, B.S., Auburn University	Specialist, Rural Resource Development, 1944, 1961
J. R. Parrish, B.S., M.S., Auburn University	Dairyman, 1938, 1948
John L. Parrott, B.S., Auburn University	Radio and TV Editor, 1959, 1961
Alice Peavy, B.S., University of Alabama; M.A., Columbia University	Specialist in Home Furnishings, 1941, 1959
G. B. Phillips, B.S., Auburn University	Specialist in Animal Industry, 1927, 1947
Fariss Prickett, B.S., Auburn University	Specialist in Foods and Nutrition, 1955, 1958
Jeanne Priester, B.S., Alabama College; M.S., Auburn University	Specialist in Equipment and Housing, 1958, 1960
Charles H. Segrest, B.S., M.S., Auburn University	Specialist, Rural Resource Development, 1956, 1962
Ralph L. Sherer, B.S., Auburn University; M.S., Cornell University	Specialist, Rural Civil Defense, 1956, 1963
Jack Smith, B.A., Auburn University	News Editor, 1962
Walter F. Sowell, B.S., M.S., Auburn University; Ph.D., Purdue University	Soils Specialist, 1948, 1960
Elmer Oscar Strickland, B.S., M. of Ag. Educ., Auburn University	District Program Specialist, 1960, 1963
Macon B. Tidwell, B.S., M. of Agr., Auburn University	Specialist, Rural Resource Development, 1957, 1961
Kathleen Thompson, B.S., University of Alabama; M.S., Penn. State University	Specialist in Clothing and Handicraft, 1944, 1952
H. B. Thornhill, B.S., Auburn University; M.S., Clemson College	Marketing Specialist in Ornamental Horticulture, 1941, 1961
Don Walters, B.S., Auburn University	Management Specialist, 1961, 1962
Norman Lee West, B.S., Auburn University	Radio & TV Editor, 1961, 1963
William R. Williams, B.S., Auburn University; M.S., University of Tennessee	Test Demonstration Supervisor, 1946, 1962
Byron B. Williamson, Jr., B.S., M. of Agr., Auburn University	District Program Specialist, 1946, 1963
William E. Wilson, B.S., M. of Agr., Auburn University	Specialist, Rural Resource Development, 1954, 1961

## OTHER STAFF

Mrs. Mary W. Brown, B.S., Auburn University	Editorial Assistant, 1963
Mrs. Afton Morrill Burt	Editorial Assistant, 1963
Mrs. Lena Smith Culpepper, B.S., Auburn University	Editorial Assistant, 1961
Mrs. Myrtle L. Good	Recorder of Reports, 1929, 1947
Mrs. Kathryn Ingram	Senior Secretary, 1960, 1961
Miss Dalene Jeter	Adm. Secretary, 1928, 1947
Miss Rennie Jeter	Business Asst., 1934, 1947
Mrs. Mary Lynn Overstreet	Audio Visual Techn., 1963
Mrs. Anna B. Stickney, B.S., Auburn University	Editorial Assistant, 1962, 1963
Miss Judith Dianne Wesson	Photographic Technician, 1963
Mr. Charles Wright	Draftsman, 1961

## COUNTY AND HOME AGENTS

(List for each county as follows: County address, county agent, associate county agent, assistant county agent; home demonstration agent, associate home agent, assistant home demonstration agent, first appointment, present appointment. All degrees are from Auburn University unless otherwise indicated.)

<b>AUTAUGA</b> Prattville	R. H. Kirkpatrick, B.S., 1944, 1953; J. R. Danion, B.S., M.S., University of Georgia, 1960. Margaret Campbell, B.S., Alabama College, M.S., University of Tennessee, 1950, 1956; Sandra Lee Hardegree, B.S., 1963.
<b>BALDWIN</b> Bay Minette	F. C. Turner, B.S., 1938, 1944; W. H. Johnson, B.S., 1934, 1963; J. T. Boulter, B.S., 1956; Donald Eugene Dunn, B.S., 1962. Mrs. Mary C. Silvey, B.S., 1955, 1957; Mrs. Eugenia Small, B.S., 1937, 1958; Mrs. Marvell Gwaltney, B.S., University of Alabama, 1959.

- BARBOUR**  
Clayton J. W. Walton, B.S., 1946, 1953; Joel R. Stephenson, B.S., 1959, 1963.  
Mrs. Frances Watson, A.B., Huntingdon College, 1934, 1937.
- BIBB**  
Centreville J. C. Odom, B.S., 1935, 1946; T. W. Camp, B.S., 1951, 1952.  
Kirtis Martin, B.S., 1933, 1937.
- BLOUNT**  
Oneonta D. S. Loyd, B.S., M. Ag., 1942, 1954; J. B. Butler, B.S., 1954;  
L. C. McCall, B.S., 1955, 1963.  
Mildred Gilbert, B.S., 1944, 1949; Julia Elise Brown, B.S., 1962.
- BULLOCK**  
Union Springs W. E. Stone, B.S., 1947, 1955; Donald E. Roberts, B.S., 1962.  
Carolyn Henderson, B.S., 1941, 1947.
- BUTLER**  
Greenville F. H. Morgan, B.S., 1946; R. C. Thompson, B.S., 1954; J. P.  
Moore, B.S., 1953, 1957.  
Laurene Howell, B.S., University of Alabama, 1949, 1959; Mrs.  
Wanda Herren Wasden, B.S., 1961.
- CALHOUN**  
Anniston A. S. Mathews, B.S., 1941, 1942; T. L. Bass, B.S., 1946, 1963;  
Goode Nelson, A.B., University of Alabama, 1945, 1948; L. G.  
Fair, B.S., 1948, 1963.  
Mrs. Yancey Walters, B.S., Alabama College, 1948, 1950; Barbara  
Williams, B.S., Florence State College, 1961, 1964; Shirley Ann  
Harrison, B.S., 1961, 1963.
- CHAMBERS**  
LaFayette E. L. Stewart, B.S., M.S., 1944, 1946; Larry D. Easterwood, B.S.,  
1961; Ted B. Smith, B.S., 1963.  
Eva Till, B.S., 1946, 1948; Mrs. Ruenette B. Gilbert, B.S., Berry  
College, M.S., 1961.
- CHEROKEE**  
Centre J. J. Young, B.S., M.S., 1933, 1944; F. M. Patterson, B.S., 1954,  
1960; T. C. Owen, B.S., 1945, 1963.  
Mrs. Geneva Marshall James, B.S., 1941, 1943; Mrs. Virginia Gar-  
mon, B.S., Alabama College, 1945, 1958.
- CHILTON**  
Clanton J. D. Sellers, B.S., 1949, 1960; D. R. Mims, B.S., 1953; W. R.  
Futrel, B.S., 1959.  
Mrs. Johnnie Lane, A.B., Judson College, 1952, 1954; Mrs. Martha  
K. Radford, B.S., University of Alabama, 1957, 1962.
- CHOCTAW**  
Butler Mathew Sexton, B.S., 1937; R. B. Deavours, B.S., 1946, 1948.  
Johnie Beauchamp, B.S., Alabama College, 1960, 1964; Mrs. Lera  
H. Manley, B.S., University of Southern Mississippi, 1964.
- CLARKE**  
Grove Hill O. C. Helms, B.S., 1930, 1933; Howard Blair, B.S., 1942, 1945.  
Lucile Burson, B.S., M.S., 1936.
- CLAY**  
Ashland W. H. Cowan, B.S., 1936, 1941; Loyd P. Owens, B.S., 1954, 1962.  
Dora Smith, B.S., Alabama College, 1952, 1953; Rochelle Williams,  
B.A., University of Mississippi, 1958.
- CLEBURNE**  
Heflin T. A. Ventress, B.S., 1937, 1948; E. C. Farrington, B.S., 1941.  
Annie Rae Milner, B.S., Alabama College, 1941, 1942; Julia Frost,  
B.S., Alabama College, 1963.
- COFFEE**  
Enterprise T. C. Casaday, B.S., M. Ag., 1949, 1963; J. R. Speed, B.S., 1943,  
1963; H. B. Thompson, B.S., M.S., 1962.  
Mrs. Sarah Hutchinson, B.S., Howard College, 1956; Mrs. Georgia  
R. Flemming, B.S., 1962.
- COLBERT**  
Tuscumbia D. G. Somerville, B.S., 1939, 1942; B. T. Richardson, B.S., 1945,  
1963; Dallas Holloway, Jr., B.S., 1964.  
Mrs. Christa Hall, B.S., University of Alabama, 1950, 1960; Mrs.  
Betty Carolyn Davis Moore, B.S., 1963.
- CONECUH**  
Evergreen M. H. Huggins, B.S., 1936, 1955; H. J. Oakley, B.S., 1954; Ger-  
then E. Williams, B.S., 1961.  
Mrs. Louise T. Ostrum, B.S., M.S., 1957, 1961; Hazel Ann Her-  
ring, B.A., Judson College, 1961.
- COOSA**  
Rockford G. S. Sessions, B.S., M.A., 1955, 1961; Jerry Walls, B.S., 1963.  
Wilma Jo Cross, B.S., 1959, 1961; Eleanor Joyce Richardson,  
B.S., 1962.

- COVINGTON**  
Andalusia W. H. Kinard, B.S., M.S., 1954; Robert E. Linder, B.S., 1960; C. W. Pike, B.S., 1952, 1963.  
Mrs. Mary Ellen Haynes, B.S., Alabama College, 1951, 1961.
- CRENSHAW**  
Luverne O. W. Reeder, B.S., 1941, 1948; G. B. Handley, B.S., 1948.  
\*\*Ida Jo Harrison, B.S., Alabama College, 1956, 1958; Eunice Prater, B.S., Alabama College, 1953, 1963; Judy Ann Holley, B.S., 1953.
- CULLMAN**  
Cullman H. G. Pinkston, B.S., 1937, 1945; C. F. Thomas, B.S., M.S., 1958; Harold Eugene Rose, B.S., 1961; William B. Webster, B.S., 1961.  
Mrs. Mary Sue Tillery, B.S., 1947, 1948; Mrs. Inez Ballew, B.S., 1954; Mary L. Brown, B.S., Judson College, 1961.
- DALE**  
Ozark W. D. Thomason, B.S., 1931; T. C. Hubbard, B.S., M. of Agr., 1936, 1963; James H. Estes, B.S., 1963.  
Ruth Sundberg, B.S., M.S., University of Tennessee, 1941, 1951; Mrs. LeJean Ford, B.S., Texas State University for Women, 1963.
- DALLAS**  
Selma L. C. Alsobrook, B.S., 1942, 1949; W. M. Arrington, B.S., 1950, 1953; Wyeth H. Speir, Jr., B.S., 1961.  
Dorothy Hixson, B.S., Alabama College, M.S., Columbia University, 1937, 1940; Martha V. Simpson, B.S., Howard College, 1963.
- DeKALB**  
Ft. Payne F. DeWitt Robinson, B.S., 1949, 1963; D. C. Poe, B.S., 1956, 1957; Howard D. Hall, B.S., 1962; Robert L. Trammell, B.S., 1963.  
Mary Louise Walker, B.S., Peabody College, 1954, 1962; Janet T. Lakeman, B.S., Florence State College, 1963.
- ELMORE**  
Wetumpka J. E. Morriss, B.S., M.S., 1935; W. E. Davis, B.S., 1959; V. L. Keeble, B.S., 1942, 1963; Joe E. Lashley, B.S., 1961, 1963.  
Betty Hamilton, B.S., University of Alabama, 1947, 1953; Hattie Wilson, B.S., Alabama College, 1947, 1954; Johnnie Sue Bryan, B.A., Judson College, 1963.
- ESCAMBIA**  
Brewton Johnnie A. Marable, B.S., M.Agr., 1955, 1963; Ronald Lee Shumack, B.S., 1963; Edward M. Knowles, B.S., 1953, 1964.  
Mrs. Peggy Bracken, B.S., 1963; Virginia Hardenbergh, B.S., 1960.
- ETOWAH**  
Gadsden T. L. Sanderson, B.S., M.S., 1943, 1949; H. J. Jackson, B.S., University of Georgia, 1944; A. D. Jones, B.S., 1948.  
Mrs. Sara L. Thomas, B.S., 1947, 1948; Mrs. Celeste H. Martin, B.S., 1957, 1961.
- FAYETTE**  
Fayette Albert Pitts, B.S., 1952, 1958; James Pettus Tucker, B.S., 1961.  
Annie Mary Hester, B.S., Berry College, M.S., University of Alabama, 1953, 1956; Mrs. Jean McCracken, B.S., University of Alabama, 1957.
- FRANKLIN**  
Russellville H. A. Ponder, B.S., 1935, 1949; H. W. Warren, B.S., 1945, 1963; Larry W. Roberts, B.S., 1960; Jack A. Thompson, B.S., 1957, 1963.  
Joyce McNutt, B.S., 1954, 1957; Elaine C. Brooks, B.S., Howard College, 1962.
- GENEVA**  
Geneva R. C. Reynolds, B.S., M.S., 1954, 1960; \*\*\*B. E. Anderson, B.S., 1960; William F. Williams, B.S., 1956, 1963; Max Franklin Scott, B.S., 1962.  
Mrs. Emily H. Seay, B.S., Alabama College, 1960, 1963; Mrs. Elsie Jo Scott, B.S., 1963.
- GREENE**  
Eutaw W. H. Johnson, B.S., 1935, 1942; J. T. Langley, B.S., 1963.  
Mary Forney Hughes, B.S., University of Alabama, 1949, 1950.
- HALE**  
Greensboro J. B. Deavours, B.S., 1937, 1946; J. N. Glass, B.S., 1948, 1963.  
Mrs. Goldie Kerr, B.S., M.S., University of Alabama, 1951; Mrs. Barbara L. Acker, B.S., Alabama College, 1963.

\*\* On leave.

\*\*\* On military leave.

- HENRY**  
Abbeville R. C. Hartzog, B.S., 1946, 1955; Carl Dennis, B.S., 1954; C. L. Barefield, B.S., 1951, 1955.  
Lillian Cox, B.S., Mississippi State College for Women, 1933, 1935; Mrs. Margaret O. Eason Kirkland, B.S., Jacksonville State College, 1961.
- HOUSTON**  
Dothan Allen M. Mathews, B.S., 1957, 1961; J. N. White, B.S., 1936, 1948; Luther J. McGaughy, B.S., 1960; Marion H. Roney, B.S., 1962.  
Julia Smith, B.S., 1955, 1956; Thelma E. Graves, B.S., M.S., Iowa State University, 1961; Shirley Karr, B.S., Howard College, 1960.
- JACKSON**  
Scottsboro J. E. Carter, B.S., 1928, 1947; S. L. Worley, B.S., 1943, 1947; Louis Edward White, B.S., 1962.  
Mrs. Clyde Peck, B.S., 1942, 1946; Ivous T. Sisk, B.S., Florence State College, 1959.
- JEFFERSON**  
Birmingham C. H. Johns, B.S., 1937, 1946; B. O. McDonald, B.S., 1959; James H. Sellers, B.S., 1939, 1963; R. A. Griffin, B.S., M.S., 1960; E. N. Graham, B.S., M.S., Mississippi State University, 1960.  
Irby Barrett, B.S., 1933, 1938; Barbara Fite, B.S., Alabama College, 1956; Mrs. Madge M. Bush, B.S., University of Georgia, 1961.
- LAMAR**  
Vernon H. H. Lumpkin, B. S., 1950, 1954; L. G. Gober, B.S., 1960.  
Barbara Clements Alawine, B.S., University of Alabama, 1953, 1961; Mary Ellen Smith, B.S., Jacksonville State College, 1962.
- LAUDERDALE**  
Florence L. T. Wagnon, B.S., 1935, 1957; Charles W. Burns, B.S., 1957, 1963; Irby J. Harrell, B.S., Berry College, 1963; James H. Pitts, B.S., M.Agr., 1955, 1963.  
Sara F. Conner, B.S., Alabama College, 1949, 1958; Olivia Ann Wages, B.S., University of Alabama, 1962; Della C. Stewart, B.S., University of Alabama, 1963.
- LAWRENCE**  
Moulton S. P. McClendon, B.S., 1943, 1946; Dean Parris, B.S., 1959, 1963.  
Mrs. Ruby Rogers, B.S., Athens College, 1953, 1956; Carylton Sue Thorn, B.S., Florence State College, 1962.
- LEE**  
Opelika R. W. Teague, B.S., 1948, 1958; P. O. Johnson, B.A., 1959; James R. Hurst, B.S., M.S., 1960.  
Mrs. Elizabeth Crum, B.S., 1955, 1957; Mrs. Emily Huie, B.S., 1963.
- LIMESTONE**  
Athens F. K. Agee, B.S., 1945, 1947; C. R. Morrow, B.S., 1946, 1963; Patrick A. Waldrop, B.S., 1962.  
Mrs. Emma Jo Lindsey, B.S., 1948, 1954; Mrs. Gail Sandlin, B.S., University of Alabama, 1956, 1961.
- LOWNDES**  
Hayneville J. W. Mathews, B.S., 1933; T. J. Gerald, B.S., 1946, 1963.  
Mrs. Mary Maddux, B.S., 1957, 1960.
- MACON**  
Tuskegee J. M. Bolling, B.S., 1939, 1946; Thomas F. Gibson, B.S., 1962.  
Mrs. Jean N. McCall, B.S., 1961, 1963.
- MADISON**  
Huntsville R. O. Magnusson, B.S., 1948, 1955; H. L. Hood, B.S., 1936, 1957; William Harold Bailey, B.S., 1963; Earl C. Halla, B.S., 1953, 1963.  
Christine Huber, B.S., Peabody College, 1944, 1962; Barbara Owens, B.S., Florence State College, 1958, 1962.
- MARENGO**  
Linden F. M. Jones, B.S., 1935, 1938; Cecil Miller, B.S., 1954; Rudy P. Yates, B.S., 1960.  
Mrs. Marjorie Weaver, B.S., 1943, 1955; Mrs. Mary Ann Weston, B.S., Howard College, 1957, 1960; Mrs. Rosalyn Ketchum Palmer, B.S., 1960.
- MARION**  
Hamilton H. B. Price, B.S., 1945, 1963; M. T. Whisenant, B.S., 1949, 1950; I. D. Thornton, B.S., M.S., 1944.  
Elna Tanner, B.S., M.S., 1950, 1952; Penelope L. Flippo, B.S., University of Alabama, 1962.

- MARSHALL**  
Guntersville W. L. Martin, B.S., 1942, 1944; R. I. D. Murphy, B.S., 1958; Franklin H. Wood, B.S., 1963.  
Betty W. Montgomery, B.S., University of Alabama, 1958, 1962; Deloris Haynes, B.S., Jacksonville State College, 1958; Mrs. Willie Mae Sparks, B.S., Florence State College, 1957, 1963.
- MOBILE**  
Mobile Charles B. Vickery, B.S., 1948, 1963; W. L. Deakle, 1943, 1944; Charles H. Kilpatrick, B.S., 1964; Charles C. Baskin, B.S., 1957, 1961.  
Mona Whatley, B.S., Peabody College, 1941, 1945; Mrs. Mildred Payne, B.S., 1941, 1954; Joyce K. Channell, B.S., M.S., University of Alabama, 1963.
- MONROE**  
Monroeville A. V. Culpepper, B.S., 1928; R. J. Martin, B.S., 1946, 1963.  
Annie Richardson, A.B., Judson College, 1952.
- MONTGOMERY**  
Montgomery T. P. McCabe, B.S., 1939, 1958; W. R. Helms, B.S., 1951, 1963; W. H. Kendrick, B.S., 1958.  
Mrs. Maude Woodfin, A.B., Huntingdon College, 1933, 1950; Mrs. Virginia Gilchrist, B.S., University of Alabama, 1955.
- MORGAN**  
Hartselle C. D. Rutledge, B.S., 1948, 1957; H. W. Houston, B.S., 1954, 1957; Jerry L. Parker, B.S., 1960, 1963.  
Lucile Hawkins, B.S., Alabama College, 1948, 1950; Mary O. Coffey, A.B., Judson College, 1961.
- PERRY**  
Marion W. O. Hairston, B.S., 1946, 1954; J. A. Bates, B.S., 1950.  
Evelyn Graham, B.S., University of Alabama, 1950, 1954; Mrs. Joyce Richardson, B.S., Judson College, 1958.
- PICKENS**  
Carrollton C. G. Davis, B.S., M. of Agr., 1948, 1954; G. T. Balch, B.S., 1957; Thomas J. Dill, B.S., M.S., Southern Methodist University, 1962, 1963.  
Mrs. Helen B. Hill, B.S., Alabama College, 1941, 1961; Lorraine Meeks, B.S., University of Alabama, 1957.
- PIKE**  
Troy H. J. Carter, B.S., 1935, 1936; G. M. Wakefield, B.S., M.S., 1957, 1963; Howard Allen Taylor, B.S., M.S., 1962.  
Margaret Brown, B.S., University of Alabama, 1943, 1944; Mrs. Florence Owens, B.S., Florida State University, 1958; Joyce Marie Haggard, B.S., Alabama College, 1962.
- RANDOLPH**  
Wedowee C. A. Moore, B.S., 1955, 1958; T. J. Burnside, Jr., B.S., 1960.  
Billie Cotney, B.S., Alabama College, 1947, 1949; Marianne Gilmer, B.S., 1963.
- RUSSELL**  
Phenix City C. A. Woods, B.S., 1947, 1955; J. A. McLean, B.S., M.S., 1954, 1963.  
Alma Holladay, B.S., 1941, 1961.
- ST. CLAIR**  
Pell City H. L. Eubanks, B.S., 1934, 1946; W. D. Jackson, B.S., 1946; J. E. Yates, B.S., 1955.  
Aileen Puckett, B.S., University of Alabama, 1957; Betty Ann Colvin, B.S., Alabama College, 1961.
- SHELBY**  
Columbiana W. M. Clark, B.S., 1937, 1963; J. E. Jones, B.S., 1958; W. J. Thompson, B.S., M.S., 1954, 1964.  
Marian Cotney, B.S., 1939; Linda K. Gillespie, B.S., 1961.
- SUMTER**  
Livingston W. B. Story, 1930, 1932; F. W. Kilgore, B.S., 1954; Howard N. Reynolds, B.S., M.A., 1962.  
Mrs. Mildred Ennis, B.S., University of Tennessee, 1958; Mrs. Annie Walker Stringer, B.S., University of Southern Mississippi, 1961.
- TALLADEGA**  
Talladega O. V. Hill, B.S., 1935, 1936; A. A. Hester, B.S., 1944, 1963; J. B. Mathews, B.S., 1949, 1951; R. H. Lee, B.S., 1958.  
Mary Baughn, B.S., Alabama College, 1951, 1957; Mrs. Sandra Jones, B.S., 1963.



- TALLAPOOSA  
Dadeville C. H. Webb, B.S., 1957, 1961; V. C. Bice, B.S., 1958; R. W. Thompson, B.S., M.S., 1958; Sam D. Carroll, B.S., 1963.  
Mrs. Margaret Miller, B.S., 1949, 1958; Nelda Lena Johns, B.S., University of Alabama, 1962.
- TUSCALOOSA  
Tuscaloosa B. R. Holstun, B.S., 1934, 1938; James Cooper, B.S., 1948, 1963; French Sconyers, B.S., 1943, 1947; James C. Howell, B.S., 1961. Mrs. Elizabeth Stewart, B.S., 1945, 1961; Mrs. Sarah N. Watson, B.S., University of Alabama, 1961; Mrs. O'Neal Massey, B.S., 1952, 1961.
- WALKER  
Jasper Robert E. Thornton, B.S., 1954, 1962; W. D. Jones, B.S., 1954. Mrs. Jeanette Argo, B.S., Alabama College, 1949, 1959; Mrs. Amelia Frost Luw, B.S., Alabama College, 1958, 1961; Mrs. Barbara Vinson Robinson, B.S., Huntingdon College, 1962.
- WASHINGTON  
Chatom D. O. Estes, B.S., 1949, 1952; George Clayton Hoopes, B.S., 1963. Mrs. Roma J. Weeks, B.S., University of Southern Mississippi, 1959; Mrs. Dorothy Sandra Henze Campbell, B.S., University of Southern Mississippi, 1962.
- WILCOX  
Camden Robert C. Farquhar, B.S., M.S., 1949, 1964; W. J. Hardy, B.S., 1954. Margaret Whatley, B.S., 1941, 1944; Geraldine Seales, B.S., Judson College, 1963.
- WINSTON  
Double Springs W. L. Richardson, B.S., 1935, 1945; J. E. Fields, B.S., 1949. Madge Pennington, B.S., 1941, 1942.

## STATE REGULATORY AND VETERINARY SERVICES

## STATE REGULATORY SERVICE

## CHEMISTRY

SAUNDERS, CHARLES RICHARD B.S., M.S., Auburn University; Ph.D., Nebraska.	State Chemist, 1924, 1950
AUGUST, NEAL NICHOLAS B.S., Auburn University.	Agricultural Chemist I, 1962
BIDEZ, ALICE BEASLEY	Secretary, 1934
CHEN, FRED A. B.A., Huntingdon College; M.S., Auburn University.	Agricultural Chemist II, 1958
GAUNTT, SELLERS B.S., Auburn University.	Asst. Chemist, 1961
HARRIS, ROBERT RUSHIN A.B., University of Alabama.	Agricultural Chemist II, 1961
RHODES, REGINA A. B.S., Auburn University.	Agricultural Chemist I, 1961
RICHBURG, REX WESLEY B.S., Auburn University; B.S., Troy State College.	Principal Chemist III, 1950, 1961

## STATE VETERINARY DIAGNOSTIC LABORATORY

(Conducted in cooperation with the Alabama State Department of Agriculture and Industries and the United States Department of Agriculture, Agricultural Research Service.)

GREENE, JAMES E. D.V.M., M.S., Auburn University.	Dean, School of Veterinary Medicine, 1937, 1958
MILLIGAN, JOHN C. B.S., D.V.M., Auburn University.	State Veterinarian, 1951
*ROBERTS, CHARLES S. D.V.M., Auburn University; M.S., Michigan State University.	In Charge of State Diagnostic Laboratory, 1947, 1958
HANNAH, SADIE J. B.S., Auburn University.	Bacteriologist, State Diagnostic Laboratory, 1962
HEMMINGER, JANICE F.	State Federal Bang's Disease Laboratory, 1962
HUNTER, KATHRYN	Laboratory Assistant II, State Diagnostic Laboratory, 1959
MAYO, FRANCES	Secretary, State Diagnostic Laboratory, 1963
WORTHY, MARY	Laboratory Assistant II, State Diagnostic Laboratory, 1959
EMUCK, V. R.	U.S. Dept. of Agriculture, Agricultural Research Service, In Charge of Bang's Disease Laboratory, 1949
BRADFORD, R. H.	U.S. Dept. of Agriculture, Agricultural Research Service, Biological Laboratory Aide, 1955
THOMPSON, JAMES L.	U.S. Dept. of Agriculture, Agricultural Research Service, Livestock Inspector, 1960
WARD, PEGGY R.N., Chestnut Hill Hospital, Philadelphia, Pa.	U.S. Dept. of Agriculture, Agricultural Research Service, Biological Laboratory Aide, 1961
WILLIAMSON, O. B.	U.S. Dept. of Agriculture, Agricultural Research Service, Biological Laboratory Aide, 1955
WILLIAMSON, RUTH	U.S. Dept. of Agriculture, Agricultural Research Service, Biological Laboratory Aide, 1957
CROFT, D. B. D.V.M., Auburn University.	In Charge of State Branch Veterinary Diagnostic Laboratory, Albertville, Alabama, 1950
MC CREARY, V. D. D.V.M., Auburn University.	In Charge of State Branch Veterinary Diagnostic Laboratory, Elba, Alabama, 1960
TOLBERT, VONBORO SUE	Laboratory Assistant, State Branch Veterinary Diagnostic Laboratory, Albertville, Alabama, 1955

\* Jointly employed by Alabama Department of Agriculture and Industries and Experiment Station, Auburn, Ala.

# Councils and Committees

1964-1965

## GRADUATE COUNCIL

The President, Executive Vice President, Dean of Faculties (Ex officio), W. V. Parker (Chairman), W. S. Bailey (Vice Chairman), Carl Benson, L. P. Burton, S. T. Coker, A. E. Fourier, B. T. Lanham, Paul Latimer, R. L. Partin, C. E. Scarsbrook, W. D. Spears, M. Sykes, D. M. Vestal, C. H. Weaver, Rebecca Roden (Secretary).

## RESEARCH COUNCIL

W. S. Bailey (Chairman), W. M. Andrews, B. W. Arthur, R. J. Bear, E. Current-Garcia, W. W. Dawson, E. Ikenberry, W. C. Jonson, J. E. Land, S. C. McIntyre, M. C. McMillan, D. M. Vestal, Coyt Wilson.

## COMMITTEES

### Academic Honesty—

J. H. Yeager, W. B. Bunger, Jeannetta Land, F. W. Martin, three students.

### Admissions (Undergraduate)—

E. J. Brumfield, W. Hinton, W. A. Tincher, Mildred Van de Mark, Howard Strong.

### Awards—

S. T. Coker, Katharine Cater, Clercie Edwards, J. T. Hood, T. D. Ragan, M. Sykes, W. G. Sherling.

### Athletics—

R. W. Allen, W. S. Bailey, F. Davis, W. T. Ingram, J. B. Sarver, C. R. Saunders, C. F. Simmons.

### Calendar—

C. W. Edwards, G. W. Beard, W. B. Bunger, B. T. Lanham, C. R. Saunders, W. A. Speer.

### Campus Planning—

L. E. Funchess, W. T. Ingram, F. M. Orr, F. H. Pumphrey, E. V. Smith, W. A. Speer.

### Class Schedules—

C. W. Edwards, C. P. Anson, Clercie Edwards, Haniel Jones, N. Macon, W. R. Patrick, C. F. Simmons, W. A. Tincher.

### Concessions Board—

A. J. Hill, C. S. Bentley, Katharine Cater, A. A. Miller, and three student members.

### Courses and Curricula—

M. C. Huntley, L. P. Burton, C. H. Cantrell, C. W. Edwards, W. V. Parker, C. F. Simmons.

### Discipline—

For Men: R. C. Anderson, A. G. W. Johnson, C. R. Saunders, E. V. Smith, one student.

For Women: Katharine Cater, Jeannetta Land, Laura Newell, one student.

### Exchange Fellowships—

M. C. Huntley, E. Current-Garcia, C. R. Saunders.

### Fraternities—

G. W. Beard, Katharine Cater, G. J. Cottier, J. E. Foy, one student member.

### Health—

M. W. Brown, A. E. Fourier, J. E. Foy, Mildred Van de Mark.

**High School Relations—**

H. N. Hawkins, E. J. Brumfield, Katharine Cater, Clercie Edwards, J. E. Foy, Howard Strong, W. A. Tincher, one student member.

**Honor Societies—**

E. O. Price, F. M. Orr, C. H. Weaver.

**Insurance—**

R. C. Anderson, W. T. Ingram, C. C. Stalnaker.

**Lectures and Concerts—**

Katharine Cater, R. C. Cargile, C. E. Cook, E. M. Crawford, E. Justice, J. H. Liverman, T. B. Peet, Ray Ritland, three student members.

**Library—**

C. H. Cantrell, R. W. Allen, A. H. Groth, G. M. Hocking, J. E. Land, K. Ottis, G. E. Tanger, R. L. Saunders, Lilly Spencer, W. A. Speer.

**Mental Health—**

M. W. Brown, Katharine Cater, J. E. Foy, R. W. Mayer.

**Nuclear Science—**

W. M. Andrews, W. S. Bailey, H. E. Carr, C. H. Clark, S. T. Coker, D. E. Davis, C. R. Saunders, C. H. Weaver, Coyt Wilson, R. E. Wingard, D. M. Vestal.

**Orientation—**

C. W. Edwards, E. J. Brumfield, C. H. Cantrell, Katharine Cater, Clercie Edwards, J. E. Foy, J. M. Richardson, one student member.

**Portrait—**

L. E. Funchess, Berta Dunn, Pattie Haney, A. W. Reynolds, J. B. Sarver, M. Sykes.

**Radiological Safety—**

C. H. Clark, W. M. Andrews, H. E. Carr, D. E. Davis, L. E. Funchess, G. W. Hargreaves, G. M. Kosolapoff, H. R. Thacker, H. Zallen (Radiological Safety Officer).

**Registration—**

C. W. Edwards, C. P. Anson, F. W. Applebee, J. R. Briney, R. C. Cargile, S. T. Coker, Clercie Edwards, A. E. Fourier, G. C. Foster, D. D. Hall, Haniel Jones, N. Macon, DeWitt Mullins, W. V. Parker, W. R. Patrick, Rebecca Roden, C. F. Simmons, Lilly Spencer, H. Strong, W. A. Tincher, H. T. Wingate.

**Religious Life—**

L. P. Burton, J. H. Blackstone, D. A. Collins, Emily Haynesworth, C. H. Moore, four student members.

**Research Grant-in-Aid—**

S. C. McIntyre, W. S. Bailey (Ex-officio), R. W. Ball, W. B. Bunger, M. J. Burns, C. H. Holmes, F. T. McCann, K. Ottis, T. B. Peet, Eithel Rose.

**Social Life—**

Katharine Cater, G. W. Beard, Frank Davis, J. E. Foy, Mary George Lamar, Jeannetta Land, five student members.

**Student Financial Aid—**

J. E. Greene, F. S. Arant, R. C. Cargile, Katharine Cater, J. F. Dunlap, R. Stalcup, R. B. Strong, D. M. Vestal, Mrs. Robert R. Chesnutt (Secretary).

**Student Publications—**

J. E. Foy, P. C. Burnett, E. M. Crawford, W. T. Ingram, five student members.

**Traffic—**

L. E. Funchess, L. O. Abney (Ex-officio), Cliff Godfrey, J. T. Hood, E. O. Jones, S. L. Thompson, Coyt Wilson, four student members.

**Union—**

J. E. Foy, Katharine Cater, C. E. Cook (Ex-officio), F. Davis, W. T. Ingram, J. B. Sarver, R. Stalcup, Chairman of Faculty Council, President of Faculty Club, eight students.

**University Relations—**

E. M. Crawford, Trudy Cargile, R. Chesnutt, Ruth Faulk, J. E. Foy, H. N. Hawkins, J. Roden, K. B. Roy, J. B. Sarver, W. A. Tincher, E. Wegener, L. B. Williams, one student member.

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# Auburn University—Past and Present

## *Historical Sketch*

Auburn University was chartered February 1, 1856, as a denominational institution known as the East Alabama Male College. It was formally opened October 1, 1859, and shortly thereafter sponsorship was assumed by the Methodist Church. In 1861, a short period of growth was interrupted by the War Between the States and the College, except for the preparatory department, suspended operation. The College building was used as a hospital from 1864 to 1866. Reopening in 1866, the College was continually beset with financial problems.

In 1862 Congress passed the Land-Grant College Act which provided for the donation of lands to the states for the establishment of colleges, the leading object of which, without excluding other sciences and classical studies, was to teach such branches of learning as Agriculture and the Mechanic Arts "in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life." Alabama accepted this act in 1868.

The Alabama Legislature, by an act approved February 26, 1872, accepted an offer of the Alabama Conference of the Methodist Episcopal Church, South, to donate to the State the property and good will of the East Alabama Male College, and located the Alabama Agricultural and Mechanical College at Auburn, the first land-grant college in the South established separate from the state university.

When women students were admitted in 1892, college coeducation was inaugurated in the South.

In 1899, the Legislature, following an earlier action of the Board of Trustees, changed the name of the institution to The Alabama Polytechnic Institute. Justification for the change was that the college had broadened its program and taught not only the branches related to Agriculture and the Mechanic Arts, but also the sciences and arts related to the development of modern civilization.

Since World War II, Auburn University has experienced the greatest growth and development in the institution's history. The University's growing and changing enrollment patterns have clearly indicated the broadened scope of the academic program. For example, in the fall quarter of 1963 of the 9,819 students enrolled in the University's 10 schools, 8,575 were enrolled in the Schools of Engineering, Education, Science and Literature and the Graduate School. From the first the name of the City—drawn from Goldsmith's immortal line, "Auburn, loveliest village of the plain"—has been used to designate the institution. In recognition of this fact and the broadened academic program, the Alabama Legislature changed the name of the institution to Auburn University on January 1, 1960.

Auburn University today is one of the South's largest institutions. From an enrollment of 80 in 1859, the student body has increased to more than 9,500. The original plant consisting of a single building and 16 acres has expanded into a multi-million dollar plant comprising 53 main buildings and 1,871 acres. As a land-grant institution, through its programs of instruction, ag-



ricultural and engineering experiment station research, and the Alabama Extension Service, Auburn University touches the life of nearly every Alabama family.

The City of Auburn, incorporated in 1838 in Lee County, Alabama, is located at the junction of the southern border of the Piedmont Plateau with the Coastal Plains. The elevation is 732 feet and temperatures are moderate throughout the year. It has an area of about 20 square miles and a population of approximately 18,000.

Auburn is 60 miles east of Montgomery, 120 miles southeast of Birmingham, and 125 miles southwest of Atlanta, Georgia. Located on U.S. Highway 29, Interstate Highway 85, and Alabama Highways 14 and 147, transportation facilities include the Greyhound and Ingram Bus Lines, the Western Railway of Alabama, and an excellent airport.

## *Auburn's Three Functions Today*

The official seal of Auburn University carries three words, Instruction, Research, and Extension, indicating the three functions through which the institution serves the State.

Through INSTRUCTION it trains leaders for the economic and social life of the state, region and nation.

Through RESEARCH, basic and applied, it seeks to enlarge and verify the major bodies of knowledge and to find solutions to problems confronting industrial, agricultural and professional groups.

Through EXTENSION, it conveys to the people of the State the findings of research and its application to the improvement of working and living.

### INSTRUCTION

There are 10 academic schools incorporated in Auburn University, including 48 departments for specialized study. Baccalaureate, masters' and doctoral degrees are offered and awarded on a basis of high standards. A strong graduate program strengthens undergraduate areas and all research programs. Military instruction is offered through the Schools of Military, Naval and Air Science.

That technical and occupational education have cultural value is the fundamental doctrine of the land-grant institutions. As the increase in technical knowledge puts greater claim on the student in a professional curriculum, the importance of his liberal education becomes even greater. Improvement of the humanistic-social stem of the technical curricula is an aim in each school.

### RESEARCH

Chiefly because of lack of subject matter for instruction, the land-grant college upon its inception accepted responsibility for discovering and organizing knowledge in fields relating to agriculture. The purposes of research at Auburn University suggested in the Hatch Act of 1887 provided for establishment and support of agricultural experiment stations. Its objectives were to conduct research bearing on the agricultural industry, to aid in acquiring information on subjects connected with agriculture, and to promote scientific investigation into the principles and applications of agriculture.

In 1929 an Engineering Experiment Station was established to assist industries in the State to improve manufacturing processes to study undeveloped natural resources and methods by which they may be converted into marketable products. Its services are available to industry, governmental agencies, and to citizens of the State.

In 1944 the Auburn Research Foundation was incorporated and the Research Council formed to further research, to discover and develop research talent, to cooperate with all agencies for the betterment of the South, to foster and encourage learning in natural science, social science, the humanities, agriculture, engineering, and to promote liberal and practical education in the several pursuits of life.

Furthering the frontiers of knowledge in all areas and discovering new and better ways of doing things through broadened programs of research are continuing objectives of the University as it seeks to discharge its responsibility to the people of Alabama.

At Auburn research and extension are functions coordinated with instruction. Private individual research by members of the faculty and graduate students is encouraged and extensive programs of basic and applied research are continually conducted throughout the institution.

## EXTENSION

Extending the results of research and instruction and countless other services directly to the people of the State in the cities and on the farms; in organized classes and in the home; by lecture, demonstration, publications and otherwise has long been a major responsibility of the institution. Leaders of land-grant colleges, never content with confining their efforts to helping those who come to the campus, have gone into the far corners of the State serving the people and giving them the benefit of knowledge they have acquired through instruction and in the laboratories and on the farms.

Since the passage of the Smith-Lever Act in 1914, farm and home agents and specialists of the Agricultural Extension Service have carried specific and useful agricultural and home management information to people on the farms. Results have been higher crop and livestock production, improved soils, diversification, better marketing facilities, more machinery, more pleasant homes, and less drudgery.

The Engineering Extension Service was established in 1937 to provide greater opportunities for the people, businesses, and industries of the state to utilize the resources and facilities of the University. The programs of this Service include technical short courses and conferences and the co-operative education program.

Auburn has long felt its responsibility in the field of general extension. Off-campus instruction is available through the Field Laboratory Program which enables teachers in service to work toward a graduate degree. The local school is also utilized as a laboratory in which graduate study in educational foundations is provided as a framework for solving instructional problems.

Through the cooperation of city, county and regional libraries, books and other materials of the Auburn University Library have been made available to people throughout the State.

Over the Alabama Educational Television Network established in 1955 the best instructional and informational material the University has to offer is being broadcast to the people.

Countless other services are being extended to Alabama citizens through departments such as dramatic arts, education, English, horticulture, music and speech.

## *The Campus and Buildings*

The campus of Auburn University contains 56 classroom, research, and service buildings. There are 17 women's dormitories; one major men's dormitory complex, housing 1113 students; a new athletic dormitory; 240 apartments for married students in the Forest Hills Apartments, a complex of 19 new buildings.

In addition, the Agricultural Experiment Station owns 15,945 acres of land at the 10 substations, five experiment fields, four forestry units, the plant breeding unit, the ornamental field station, and the main station at Auburn.

Considerable construction has been accomplished during the past four years, including a \$2.5 million library, used for the first time in 1963. A Physical Science Center and Home Economics building were also completed during 1963.

Through the Auburn Development Program, a new organization enabling Auburn alumni and friends to support the University, funds for the construction of a Nuclear Science Center were made available. A \$1,017,000 Nuclear Science Center is to be constructed in the future.

Direction of the Auburn University Development Program is under a 55-member board known as the Auburn University Development Council. All gifts obtained through the Development program are received by the Auburn University Foundation, a corporation created expressly for that purpose and administered by a seven-man board of directors.

A map of the campus listing the buildings and their function is shown on pages 88 and 89.

## Experiment Station Properties

The Agricultural Experiment Station System of Auburn University owns 15,945 acres of land at the ten substations, five experiment fields, four forestry units, plant breeding unit, ornamental horticulture field station, and the main station at Auburn. Acreages and locations of the above mentioned units are as follows:

Main Station	Auburn	Lee	3,834
Substations:			
Black Belt	Marion Junction	Dallas	1,116
Chilton Area Horticulture	Clanton	Chilton	161
Gulf Coast	Fairhope	Baldwin	800
Lower Coastal Plains	Camden	Wilcox	2,539
North Alabama Horticulture	Cullman	Cullman	160
Piedmont	Camp Hill	Tallapoosa	1,409
Sand Mountain	Crossville	DeKalb	536

Tennessee Valley	Belle Mina	Limestone	755
Upper Coastal Plains	Winfield	Marion and Fayette	735
Wiregrass	Headland	Henry	523
<b>Experiment Fields:</b>			
Alexandria	Alexandria	Calhoun	90
Brewton	Brewton	Escambia	80
Monroeville	Monroeville	Monroe	80
Prattville	Prattville	Autauga	80
Tuskegee	Tuskegee	Macon	230
<b>Plant Breeding Unit</b>	Tallassee	Elmore	670
<b>Ornamental Horticulture</b>			
Field Station	Spring Hill	Mobile	7
<b>Foundation Seed Stocks Farm</b>	Thorsby	Chilton	180

In addition to the above, there are 1,960 acres at the Forestry Units in Autauga, Barbour, Coosa, and Fayette Counties.

## *Sources of Revenue*

Auburn University derives its support from the State and Federal Governments and from other sources. Funds are as follows:

1. Direct annual appropriations made by the State for support, maintenance, and development of public education, including campus instruction, agricultural research, agricultural extension, engineering research, and educational television.
2. Special appropriation made by the State for buildings, purchase of lands, and improvements.
3. Funds derived from the original endowment of the institution under the Federal Land-Grant Act and earnings from other subsequently acquired endowment funds.
4. Income derived from the payment by students of fees and other charges. All tuition at Auburn University is free, except to non-residents of Alabama, but certain fees are assessed to cover specific services.
5. The Morrill fund appropriated by the United States Government for the instruction of students in the sciences relating to agriculture and the mechanic arts and in the English language, literature, and for the training of teachers in agriculture and the mechanic arts.
6. Funds received from the State of Alabama through the Smith-Hughes Act derived from the congressional appropriation and paid to Auburn University for its work in the training of teachers of agriculture and home economics.
7. Such revolving funds as may be incident to the operation of any department where it is advisable to sell or dispose of products produced in the course of conducting the Experiment Station or any department of the institution.
8. Gifts, grants, and donations received from alumni, private individuals, and organizations both for general and restricted educational purposes, including scholarships.

9. Direct annual appropriations made by the United States Government for research purposes and devoted to investigation of scientific agricultural problems of the farmers of the State. These funds are also for research purposes in connection with investigation of new experiments bearing directly on the production, manufacture, preparation, use, distribution, and marketing of agricultural products, and research work regarding Home Economics, and for the purpose of publishing these results.
10. Direct appropriations made by the United States Government for the Agricultural Extension Service in support of County Agricultural and County Home Demonstration Agents, for the support of boys' and girls' 4-H club work, and for other types of extension work in agriculture and home economics in the several counties of Alabama.
11. Each county in the State makes certain appropriations to supplement those from the United States Government and the State of Alabama for the support of the Agricultural Extension Service.
12. Funds received from industry, governmental agencies, and private individuals for special contractual research projects which are handled through the Auburn Research Foundation, Inc., and the Agricultural Experiment Station.

# The Academic Program

## *Purposes of Auburn University*

To maintain a community of learning where knowledge may be preserved, disseminated, and increased. (This is the fundamental purpose of all universities. To the extent that it fulfills this basic purpose of a university, Auburn University will fulfill its several particular purposes which are listed below.)

To provide the opportunity to all qualified young people of the State, regardless of their economic or social background, for a "liberal and practical education."

To provide the State, the region, and the nation with educated young people who have the disciplined minds, the knowledge, and the skills to contribute needed leadership and services to society and who will help perpetuate the moral and political values upon which our society is based.

To conduct a broad program of public and private research, basic and applied, for the general increase of human knowledge, for the benefit of society in meeting its scientific, economic and social problems, and for the stimulation of the faculty and students in their quest for knowledge.

To carry knowledge and its benefits to the people of the State by means of extension programs and the use of the mass media of communications in order to help all citizens improve their technical and cultural capabilities.

To conserve our cultural heritage through support of scholarly and creative work in the humanities, social sciences, and the arts so that the University may serve both students and citizens of the State as a focal center where the cultural traditions of our civilization are kept alive and transmitted to the future.

To engage constantly in an examination of the particular objectives, goals and programs of the University in the light of new knowledge and of changing social conditions; and as a part of this constant re-examination, to seek ever more efficient and economical means of fulfilling the University's purposes.

*The above statement of the purposes of the University was adopted by the Committee on University Objectives during the 1961-63 Self-Study.*

## *Fields of Study*

Auburn University offers work in many fields. The student has an opportunity for specialization and the pursuit of particular interests in the several Schools including the Graduate School.

For instructional purposes, the University is organized into the following Schools: Agriculture, Air Science, Architecture and the Arts, Chemistry, Education, Engineering, Home Economics, Military Science, Naval Science, Pharmacy, Science and Literature, Veterinary Medicine and the Graduate School.



Instruction is given in each School through four quarters of approximately 11 weeks, with the fourth quarter serving as the summer session.

Resident instruction in the University is offered through Schools and Departments as indicated below. Regular curricula offered and degrees conferred by the several Schools are also listed.

**School of Agriculture**, includes the Departments of Agricultural Economics, Agricultural Engineering, Agronomy and Soils, Animal Science, Botany and Plant Pathology, Dairy Science, Forestry, Horticulture, Poultry Science, and Zoology-Entomology. Curricula offered are: *Agricultural Science, Agricultural Administration, Agricultural Engineering, Biological Sciences, Forest Management, Ornamental Horticulture, and Wood Technology*. Within each curriculum students are permitted to major in line with their special interests.

Degrees: Bachelor of Science in Agriculture, Agriculture (Dairy Manufacturing), Agricultural Administration, Agricultural Engineering, Biological Sciences (Botany, Zoology, Entomology, Fisheries Management, Wildlife Management), Forestry, Ornamental Horticulture, Wood Technology.

**School of Air Science**, includes the Department of Air Science and offers training in Air Science.

**School of Architecture and The Arts**, includes the Departments of Architecture, Art, Building Technology, Drama, and Music. Curricula offered are: *Architecture, Building Construction, Drama, Fine Arts, Industrial Design, Interior Design, Music (Majors in Applied Music, Theory and Composition, and Music History and Literature), and Visual Design*.

Degrees: Bachelor of Architecture, Arts, Building Construction, Fine Arts, Industrial Design, Interior Design, Music.

**School of Chemistry**, includes the Departments of Chemistry, Chemical Engineering, and Laboratory Technology. Curricula offered are: *Chemistry, Chemical Engineering, and Laboratory Technology*.

Degrees: Bachelor of Science in Chemistry, Chemical Engineering, Laboratory Technology, Medical Technology.

**School of Education**, includes the Departments of Elementary Education; Foundations of Education; Secondary Education, Administration, Supervision, and Guidance; Health, Physical Education and Recreation; Vocational and Technical Education; and Psychology. Undergraduate curricula offered are: *Agricultural Education, Industrial Arts Education, Elementary Education, Secondary Education (majors or minors in Art; Business Education; Dramatic Arts; English; Foreign Languages; Health, Physical Education and Recreation; Home Economics Education; Mathematics; Mental Retardation; Music; School Library Services; Science; Social Science; Speech; and Speech Correction), and Psychology*.

Degrees: Bachelor of Arts and Bachelor of Science in Education.

**School of Engineering**, includes the Departments of Pre-Engineering, Aeronautical Administration, Aerospace Engineering, Civil Engineering, Electrical Engineering, Engineering Graphics, Industrial Laboratories, Industrial Engineering, Mechanical Engineering, Textile Technology, and Auburn School of

Aviation. This School offers curricula in *Aeronautical Administration, Aerospace Engineering, Civil Engineering, Electrical Engineering, Industrial Engineering, Mechanical Engineering, Textile Management, and Textile Science.*

Degrees: Bachelor of Aeronautical Administration, Aerospace Engineering, Civil Engineering, Electrical Engineering, Industrial Engineering, Mechanical Engineering, Textile Management, Textile Science.

School of Home Economics, includes the Departments of Clothing and Textiles, Family Life and Early Childhood Education, Foods and Nutrition, and Home Management and Family Economics. Curricula offered are: *Home Economics (majors in Clothing and Textiles, Foods and Nutrition, Home Management and Family Economics, Family Life and Early Childhood Education), and Nursing Science.*

Degrees: Bachelor of Science in Home Economics (Clothing and Textiles, Foods and Nutrition, Home Management and Family Economics, Family Life and Early Childhood Education), and Bachelor of Science in Nursing.

School of Military Science, includes the Department of Military Science and offers training in Military Science.

School of Naval Science, includes the Department of Naval Science and offers training in Naval Science.

School of Pharmacy, includes the Departments of Pharmacy, Pharmaceutical Chemistry, Pharmacology, Pharmacognosy, Pharmacy Administration, and offers a curriculum in *Pharmacy.*

Degree: Bachelor of Science in Pharmacy.

School of Science and Literature, includes the Departments of Economics and Sociology, English and Journalism, Foreign Languages, History and Political Science, Mathematics, Philosophy, Physics, Religious Education, Speech, and Secretarial Training. Curricula offered are: *Science and Literature (majors in liberal arts subjects), Pre-Law, Business Administration, Secretarial Administration, Applied Physics, Physics, and Pre-Professional Science (Pre-Medicine, Pre-Dentistry, and Pre-Veterinary Medicine).*

Degrees: Bachelor of Arts, Bachelor of Science, Bachelor of Science in Business Administration.

School of Veterinary Medicine, includes the Departments of Anatomy and Histology, Bacteriology, Pathology and Parasitology, Physiology and Pharmacology, Surgery and Medicine, and offers a curriculum in *Veterinary Medicine.*

Degree: Doctor of Veterinary Medicine.

The Graduate School administers programs leading toward the degrees of Master of Arts, Master of Science, Master of Agriculture, Master of Agricultural Education, Master of Fine Arts, Master of Building Construction, Master of Business Administration, Master of Education, and Master of Home Economics. Beyond the Master's degree, a program is offered toward the degree Specialist in Education, and doctoral degree programs leading to the degrees Doctor of Education and Doctor of Philosophy.

## *Library Facilities*

A new Auburn University Library, four stories high with study capacity for 2,000 students and room for one million volumes, opened its doors for the first time in January, 1963. It is centrally located and organized to serve most efficiently the three divisions of Instruction, Research, and Extension.

Spacious reading rooms are separated by glass walls, to give a panoramic view of each floor, with fluorescent lights, contemporary furniture, and open book stacks aiding the student in his study.

The Library also contains 98 closed carrels for the use of faculty members and graduate students engaged in library research, a special microfilm reading room, seven rooms for listening to recordings and a projection room with theater seats to accommodate 108 where special educational films may be viewed. The building is completely air-conditioned and contains the only public elevators on the campus.

In January, 1964, the Library contained approximately 350,000 volumes, and many thousands of state and federal government publications. Materials issued by the various branches of the federal government by the Atomic Energy Commission are received on depository account.

Experiment station bulletins in both agriculture and engineering are available. Thousands of books, dissertations, and documents are received on microfilm and microcards, as well as important newspapers and periodicals. More than 5,000 serials are being received currently; back files are available for a large portion of these titles.

The Library contains several valuable special collections, most of which were given by friends or patrons. Among these are the George Petrie Memorial Collection, presented by Miss Kate Lane; the Flagg Architecture Library, given by the Alabama Institute of Architects; the Hodson Collection on the History of Agriculture, presented by Mr. Edgar A. Hodson, Arkansas State Agronomist; the personal library of the late Mrs. Ross, widow of Dr. B. B. Ross, a member of the faculty for many years; and an excellent sports collection, donated by Mr. C. W. (Bill) Streit of Birmingham. The Library also maintains a collection of documents and publications in Alabama history and government along with the papers and publications of the University in the Alabama Room.

Borrowing privileges are extended to the members of the administrative, research, instructional, and extension staffs of the University, also to governmental departments and agencies located in Auburn. Loan privileges are also extended to all citizens of the State by inter-library loan requests through their local libraries; to all students in residence; and to active, honorary, or research members of the Auburn Research Foundation.

Books which are needed for reserve use by the various classes are to be found at the reserve desk on the first level. There is also a large reserve reading room, a general reading room, the special collections department, a projection room and a browsing room on this floor where popular and contemporary books, magazines and newspapers are available.

Housed on the second floor are the humanities department, the bibliography room, the technical services department, the circulation department, and the administrative offices.

The third floor is devoted entirely to the social sciences, and the fourth floor is used for the biological and physical sciences.

## *Correspondence Study Program*

The Correspondence Study Program provides undergraduate instruction for persons unable to attend college on a regular basis. Correspondence courses parallel those given in the University and are taught by members of the University faculty. All courses carry college credit.

**Organization of Courses** — A complete course outline with full information and instructions is sent to the student upon registration. Courses consist of varying amounts of credit and numbers of units. Each work unit requires certain textbook readings and written preparation. Supplementary reading and reports may be required of the student by the instructor on any assignment. Written work is submitted to the Correspondence Study Office.

**Qualifications** — Any person who might profit from college level courses is eligible to enroll. No entrance examination is required for admission to correspondence study, but the right is reserved to reject any applicant who does not furnish complete or satisfactory data on the formal application. Enrollment for correspondence study does not constitute admission to Auburn University.

Restrictions placed on Auburn University students regarding correspondence work are described in the regulations in Section III of the Correspondence Study Bulletin. The use of correspondence work in regular programs at Auburn University is explained on page 104 of this Bulletin.

**Credit** — Undergraduate credit equivalent to that earned in regular college classes is given for correspondence work. Although graduate credit cannot be earned by correspondence, certain undergraduate deficiencies may be cleared.

**Examinations** — A final examination is required in each course upon completion of all unit work. The examination should be taken in the Correspondence Study Office but may, on approval, be taken elsewhere under the supervision of an approved proctor. Proctors approved are city or county superintendents of schools, principals of accredited senior high schools, and/or deans and department heads of colleges. Students in military service may arrange to take the examination under the supervision of the Education Officer of their station.

**Fees** — The fee for each course is \$10.00 for the first quarter hour of credit and \$5.00 for each additional hour. Fees are payable in advance and should accompany the application.

For application form and further information write to Director, Auburn University Correspondence Study Program.

# Information For New Students

## *Admissions*

Admission to Auburn University, in keeping with the land-grant tradition, is open to men and women in all economic stations, giving them the benefits of higher education formerly reserved to the few. Auburn is a university of the people and for the people.

Because of the large number of applications, credentials should be filed at the earliest possible time. In every case, complete admission credentials, including the physical examination report, must be filed at least three weeks prior to the opening of the quarter in which admission is desired. The University reserves the right, however, to establish earlier deadlines should the number of applicants exceed the number of students who can be adequately instructed or housed. Application forms may be obtained from the Admissions Office.

A ten dollar (\$10.00) application processing fee must accompany all applications for admission. This fee is required for all new undergraduate applicants and is not refundable or applicable to registration or tuition fees.

Applicants may be admitted to curricula in any quarter, with the exception of Architecture, Interior Design, Industrial Design, and Veterinary Medicine, to which curricula they are admitted in the Fall Quarter only. For admission of out-of-state applicants, see page 76. For special requirements for admission to Architecture, see page 126; Engineering, page 164; Pharmacy, page 189; Veterinary Medicine, page 203.

## General Requirements

Applicants may be admitted when general requirements herein stated have been satisfied and when on the basis of complete official transcripts the applicant has been officially notified of his acceptance. Auburn University in the interest of good instruction reserves the right to reject any and all applicants whose admission would result in the overcrowding of instructional and housing facilities.

Applicants for admission will be considered in terms of their academic preparation, mental capacity, and aptitude for the course of study desired; morality; health; and psychological fitness for the environment, traditions and customs of this institution. In submitting admission credentials, the applicant must give requested information fully and accurately. False or misleading statements can result in denial of admission or cancellation of registration.

High school students expecting to apply for admission to Auburn University are advised to emphasize in their programs the following subjects: English, mathematics, social studies, sciences, and foreign languages. A maximum of four units will be allowed in vocational subjects.

## American College Tests

Freshman applicants are required to complete the American College Tests (ACT) on one of the announced state-wide testing dates. High school seniors

may secure application forms and information regarding the tests from their principals. American College Test scores are used as a partial basis for admission, for placement in English, chemistry and mathematics, and for awarding university-administered scholarships and loans. The Scholastic Aptitude Test (SAT) of the College Entrance Examination Board will be accepted in lieu of the American College Tests for applicants from states where this test is required.

## Physical Examination Report

Each applicant must complete and return, at least three weeks prior to the opening date of the quarter in which admission is desired, a **physical examination report** on a form which the University will furnish. The University reserves the right to require any student to submit to such additional medical examinations as are believed advisable for the protection of the University community, and to refuse admission to any applicant whose health record indicates a condition which college work could affect adversely or which would be harmful to the students of the University.

Any applicant who fails to comply with this requirement will not be admitted to Auburn University.

## Pre-College Counseling Program

As a means of helping entering freshmen to make wiser decisions in choosing their field of study and to adjust more readily to their first quarter of college life, Auburn University has instituted the Pre-College Counseling Program.

Required of all freshmen entering during the fall quarter, the Program consists of a series of two and a half-day sessions held during the summer. During these sessions, groups of 150 students visit the campus to take appropriate tests, talk with trained counselors and hear faculty members discuss the requirements and opportunities in their areas of speciality.

In addition, entering freshmen are given the opportunity to pre-register for their first quarter of college work, assuring them of courses they will need when they return to begin their college career. New students will be able to receive more individual attention from faculty advisors unhampered by duties connected with the registration of upperclassmen.

A small fee will be charged for the service. More detailed information concerning the Pre-College Counseling Program will be mailed to all students tentatively admitted to the freshman class.

## Admission To Freshman Class

The requirement for admission shall be graduation from an approved secondary school with a minimum of fifteen units (or twelve such units from a three-year senior high school) or the equivalent of this requirement as shown by examination. (See "early admission" plan under Advanced Standing Program below.)

Graduates of accredited Alabama secondary schools who attain composite scores of 16 or above on the American College Test and who present satisfac-



tory grades in college preparatory courses are academically eligible for admission. Repetition of the American College Test until the minimum score is attained does not alone provide assurance of admission.

Non-resident applicants must have graduated from an accredited high school with an over-all average of "C" and have attained a composite score of 18 on the American College Tests or a total score of 800 on the College Entrance Examination Board's Scholastic Aptitude Test.

High school graduates who do not meet the above standards may apply for admission. Such applicants will be considered on an individual basis, and any one or any combination of the following types of evidence may be used in appraising the eligibility of the applicant for admission: a personal interview, high school grades, rank in class, recommendation of the high school principal, and/or review of the results of tests already given or which may be required.

Non-graduates of mature age may be admitted to full freshman standing if scores made on the USAFI General Educational Development Tests, the American College Tests, or other standard college aptitude tests, and/or such special achievement tests or subject examinations as may be recommended by the Committee on Admissions, indicate educational attainment equivalent to graduation from a four-year high school. Students entering from non-accredited schools may be accepted if they make satisfactory scores on tests prescribed by the Committee on Admissions.

**Early Admission** — Students of high academic promise may be admitted directly from the eleventh year of school without the secondary school diploma. Basic requirements for early admission are:

1. Proper personal qualifications.
2. Superior competence and preparation as evidenced by the high school record, and by satisfactory scores on pre-admission aptitude tests, College Entrance Examination Board achievement tests in English, Mathematics, and History or a science, pre-registration placement tests, or proficiency tests administered by appropriate departments at Auburn University.
3. A letter from the principal recommending the applicant as to emotional and social maturity and readiness for college work, and indicating approval of his early admission.

**Requirements In Mathematics** — One unit of college preparatory mathematics is required for admission to all curricula. This must be a course in basic or fundamental mathematics specifically designed to include the study of the deductive nature of mathematics, and cannot be replaced by such courses as business mathematics, personal finance, general mathematics, etc.

A second unit of college preparatory mathematics is required for all curricula which include MH 111 — Introductory College Mathematics, and a third unit for those curricula requiring mathematics beyond the freshman year. The second unit must be principally the study of geometry, including the geometry of three dimensions. The student planning to study engineering or architecture should take a fourth unit including advanced algebra and trigonometry. Students admitted with entrance deficiencies must clear them before registering for MH 111.

## Advanced Standing Program

Under the Advanced Standing Program, able students of superior preparation are afforded the opportunity of being placed in programs suited to their abilities and preparation for college study. Some exceptionally able students may be admitted prior to high school graduation. (See above under "Early Admission.") High school graduates of superior achievement may be able to qualify for advanced placement and for credit which may count toward degree requirements.

**Advanced Placement** — Entering freshmen who demonstrate superior preparation are accorded the opportunity of qualifying for advanced placement and/or credit, not to exceed a total of 45 quarter hours, in the following areas: Biology, Botany, Chemistry, English, Foreign Language, History, Mathematics, Physics, and Zoology.

Advanced placement or credit may be granted to entering freshmen who during their senior year in high school have made satisfactory scores on the College Board Advanced Placement Examinations.

A student with special competence in a specific area, as evidenced by high school grades and scores on college ability or achievement tests, may apply for a departmental examination which may qualify him for advanced placement or credit in that department.

The amount of credit allowable through advanced placement is determined by the dean and the department head concerned. A brochure describing the Advanced Standing Program will be forwarded by the Registrar upon request.

## Admission Of Transfer Students

Advanced standing is granted to students transferring credits from accredited colleges. Undergraduate transfer applicants must have satisfactory academic and citizenship records and must be eligible to re-enter the last institution attended. Applicants must submit two official transcripts of record from each institution attended. Residents of Alabama must have earned from all work attempted credit hours and grade points equal to the following percentage schedules: one to four quarters of attendance, 60 per cent; five to seven quarters, 70 per cent; eight quarters and beyond, 80 per cent. Out-of-state residents must have a cumulative grade point average of 1.0 (C) on all college work attempted. Graduates of accredited institutions seeking admission to an undergraduate school of Auburn University will not be required to meet the percentage of "C" average regulations stated above.

Unless high school credits are shown on the college transcript, one transcript of the high school record must be filed. Students transferring from colleges not satisfactorily accredited will be granted provisional admission or may be required to stand examinations in all subjects for which credit is desired. The University reserves the right to require entrance examinations of those applicants transferring from colleges with which the University has had no experience. The amount of advanced standing credit allowed will be determined by the dean and the Registrar. Credit for "D" grades will be allowed as approved by the dean except that credit is allowed in Freshman English only on grades of "C" or better.

## Admission To Graduate Standing

Graduation with a Bachelor's degree or its equivalent from an accredited college or university is requisite for admission to the Graduate School. The undergraduate preparation of every applicant for admission must also satisfy the requirements of a Screening Committee of the school or department in which he desires to major. For further information see section on The Graduate School and write for special catalog.

## Admission Of Special Students

Persons at least 20 years of age who cannot fulfill the regular admission requirements for freshman standing but otherwise have acquired adequate preparation for university courses may be admitted as special students on approval of the dean concerned. To become a candidate for a degree, a special student must meet entrance requirements.

## Non-Resident Students

Because of limited facilities and in the interest of good instruction, admissions are restricted, except in the case of children of alumni, to residents of Alabama and those states which are parties to the Southern Regional Compact.

In assessing fees students are classified as resident and non-resident students. In addition to fees charged to Alabama students, non-resident students are required to pay a tuition fee of \$100.00 per quarter. This fee is remitted to sons and daughters of ministers. No tuition is charged to Alabama residents.

A resident student, if under 21 years of age, is one whose parents (or guardian) have been residents of Alabama for at least six consecutive months next preceding his original enrollment, or whose parents were residents of Alabama at the time of their death, and who has not acquired residence in another state. In all cases of guardianship, the period of guardianship must have been not less than six months at the time of original enrollment. If the parents are divorced, legal residence will be determined by the residence of the parent to whom the courts have granted custody.

A resident student, if over 21 years of age, is one whose parents are, or were at the time of their death, residents of Alabama, and who has not acquired residence in another state; or who, as an adult, has been a resident of Alabama for at least six consecutive months next preceding his original enrollment; or who is the wife of a man who has been a resident of Alabama for at least six consecutive months next preceding his original enrollment.

All students not able to qualify as resident students are classified as non-resident students. If there is any possible question of his right to legal residence the applicant should bring the matter to the attention of the Registrar before registering. The burden of proof as to residence is upon the student. Any student who registers improperly under these regulations will be required to pay not only the non-resident fee but also a penalty fee of \$10.00. A student who does not clear this obligation within 30 days after official notice will have his registration cancelled.

Title 17, Article 2, Section 15 of the 1940 Code of Alabama, provides that residence may not be acquired by attendance at an institution of higher learning. No person who is once registered as a non-resident student shall be

considered to have gained legal residence in Alabama by virtue of having attended college in this State or by residence in Alabama while a participant in the Auburn University Co-operative Program. Persons whose legal residence follows that of parents or guardians shall be considered to have gained or lost legal residence in this State while in college according to changes of legal residence of parents or guardians, but legal residence shall not be considered to have been gained until six months after such persons have become legal residents of this State.

## *Living Accommodations*

The over-all dormitory program is operated on the basis that a university education is not confined to classroom activities. A true university education includes the total experience of living within an educational environment. A schedule of activities, student government, and a diversified program which the residents help plan and in which they participate are important parts of university education.

In all University dormitories and apartments, careful precautionary measures are taken to assure the security of the residents and their personal property. However, the University does not insure personal property of the residents and is not responsible for damage to or loss of personal property of occupants of University-owned facilities.

The University reserves the right to inspect the rooms of students living in University housing at periodic intervals.

## *Men Students*

Auburn University provides dormitory accommodations for approximately 1257 men students. The men's dormitories are in two areas, Magnolia Dormitories and the Plainsman Dormitory.

Magnolia Dormitories, housing 1113 men students, is a three-building unit in the northwestern part of the campus. All units are of brick, hollow-tile, and steel construction and together form one of the best-equipped resident areas for college men in the South. Magnolia Hall was completed in 1948, Bullard Hall was completed in 1952, and Noble Hall was opened in January of 1957. Each of these buildings is connected with another to form a harmonious architectural and living pattern. All buildings are arranged into divisions of approximately 40 students. These residents sharing the experience of living together form the basis of the dormitory program. There is a dormitory counselor for each division. The dormitory counselors are assisted by graduate counselors under the direction of the resident counselor and the dormitory manager in carrying out the dormitory program.

In the Magnolia Dormitories two students share a room. Each student has his own single bed, closet, and study table. The dormitory contains well-appointed lounge and recreational areas, a post-office, a snack bar, and other facilities to make a complete living unit. The housemothers, the resident counselor, and the family in residence have their apartments in the buildings.

Plainsman Dormitory, which houses 144 men students, is equipped with dining facilities and is supervised by a resident staff member. There are two boys in each of the 72 rooms, with separate study hall and lounge.

In addition to the dormitory housing accommodations for men students, housing may be obtained in private dormitories and homes in Auburn, and in the fraternity houses. The Student Affairs Office maintains for the convenience of students a file of off-campus accommodations for men.

**Room and Board Charges.** Room and board for men students in Magnolia Dormitories is \$180.00 per school quarter. Magnolia Dormitory residents may elect to take meals in the dining halls or elsewhere. Those eating in the dining hall may take meals seven days per week at \$120.00 or five days per week at \$102.00 per quarter. Those eating outside the dormitory will only pay the \$60.00 per quarter room rent. All board charges are subject to payment of applicable sales tax.

Students who, at the beginning of the quarter, elect to have meals in Magnolia Dining Hall may withdraw from such arrangements within the first two weeks of the quarter and receive a refund of amounts paid, less a minimum charge for board for two weeks plus a \$7.50 surrender charge, upon return of meal tickets issued. No change in board arrangements may be made by dormitory residents after the two-week period has expired. Students withdrawing from the dormitory or resigning from school after the allowable two-week period will be charged on a daily basis plus the \$7.50 surrender charge.

Room and board bills are to be paid at the office in each of the dormitory areas. Accounts not cleared on or before the fifth day of the current month or sixth day of the term in which the office is open for business, whichever date comes earlier, are subject to a late fee of \$1.00 per day to a maximum of \$5.00. All room and board accounts are due and payable in full at the beginning of each quarter. However, where deemed necessary, arrangements may be made at the Cashier's Office in the student's dormitory area for payment of the amount in not more than three installments. Such payments must be made at the beginning of the period they are intended to cover. For information in advance concerning part payments, write the Housing Manager in the Men's Dormitories or Women's Dormitories, as applicable.

Room assignments will be valid only through 5:00 p.m. of the 6th day after the dormitories officially open, unless the room has been paid for in advance or other satisfactory arrangements have been made before that date.

Authorized refunds of room rent will be made on a calendar week basis and board charges on a daily basis when students leave the University dormitories and dining halls. A minimum charge of  $\frac{1}{3}$  of the quarterly room rent rate will be charged any student vacating rooms after school opens, with refunds being made not to exceed  $\frac{2}{3}$  of the quarterly (12 weeks) rate. A calendar week begins on Sunday. Students vacating dormitory rooms without proper notice to the dormitory office concerned will be charged rent on the room until such notice has been properly filed with the office that the room has been vacated.

Although every effort will be made to maintain the present room and board prices, if food prices advance abnormally, it may be found necessary to increase these costs.

For men students living in private dormitories, cooperative boarding houses, private homes, and fraternity houses, rooms without meals range from \$50.00 to \$70.00 for each school quarter. The meals in boarding houses near the campus are about \$45.00 a month.

**Room Reservations.** 1. Inquiries regarding rooms for men students should be addressed to the Manager of Magnolia Dormitories. Applications for any quar-

ter will be accepted three quarters in advance except for the Fall Quarter. Inquiries concerning Fall Quarter applications will be accepted after January 1 each year. These inquiries will be numbered in the order of receipt by the Dormitories Office and applications will be mailed on the first of April. The application form with a \$25.00 check payable to Auburn University for room reservation deposit, should be returned to the Manager, Magnolia Dormitories, as soon as possible. Room reservation deposits will be held to cover the loss of and/or damage to dormitory property. Room reservation deposit is not applicable to room rent.

2. Refund of room reservation fees may be made under the following conditions: (1) When reservations for the Fall Quarter are canceled on or before August 15, prior to the beginning of the Fall Quarter; (2) when reservations for the Winter Quarter are canceled on or before December 15; (3) when reservations for the Spring Quarter are canceled on or before March 1; (4) when reservations for the Summer Quarter are canceled on or before May 15; (5) when room is vacated at the end of the quarter and no future reservations are desired; (6) when a resident enters military service during the quarter. No refund of reservation fees will be made under circumstances other than those outlined above.

## Women Students

Housing for approximately 1700 women is furnished in the women's dormitories. Residence in the dormitories is compulsory for all women students unless the Dean of Women gives them special permission to live elsewhere. A head resident is in charge of each dormitory and serves as counselor to the students as well as dormitory hostess. Women students are subject at all times to regulations of the University and the Women's Student Government Association.

All students residing in the dormitories must eat in the University dining halls where meals are served under the supervision of trained dietitians. Costs for special diets will be borne by the student.

The women's dormitories consist of the main dormitory group and the South Women's Dormitories.

In the main dormitory group are:

No.	Name	No.	Name
1	Elizabeth Harper Hall	8	Ella Lupton Hall
2	Kate Conway Broun Hall	9	Helen Keller Hall
3	Willie Little Hall	10	Marie Bankhead Owen Hall
4	Kate Teague Hall	11	Annie White Mell Hall
5	Letitia Dowdell Hall	12	Dana King Gatchell Hall
6	Allie Glenn Hall		Alumni Hall
7	Mary Lane Hall		Auburn Hall

Harper, Broun, Little, and Teague Halls, Social Center and the Women's Dining Hall form a quadrangle in the foreground of the dormitory area located between the University Library and the tennis courts and across from the Auburn Union. The Dining Hall is readily accessible to all the dormitories in the area. Each of the dormitories, I through X, houses approximately 100



girls and is arranged in suites consisting of two double rooms connected by a tiled bathroom. The rooms are equipped with twin beds, a double desk, two desk chairs, a reading lamp, a bedside table, an easy chair and two chests. Lounge space is furnished in each building.

Annie White Mell Hall and Dana Gatchell Hall are smaller dormitories, housing approximately 50 girls each. They are located on Mell Street, adjacent to the other dormitories. These dormitories have community baths located at the end of the hallways and are furnished in a manner similar to the other dormitories.

Gatchell Hall is a cooperative dormitory. Here the girls prepare their own meals and do their own cleaning; as a result, cost of room and board is much less than in the other dormitories.

Alumni Hall, located on South College Street, houses approximately 100 girls. This dormitory has its own dining hall located in the basement of the building. The rooms are not in suites, there are community baths, and the furnishings are the same as in the other dormitories.

Auburn Hall, on East Thach Avenue, housing 182 girls, is the largest women's dormitory. Community baths are located conveniently on each floor. The girls living here take their meals in Alumni Dining Hall, approximately two blocks away.

Social Center is a southern colonial building in which are located the offices of the Dean of Women, the Assistant Dean of Women, the Assistant to the Dean of Women and the Dormitory Supervisor. A cashier's office and post office are located in Social Center. In addition, there are two large living rooms, a dining room, and a kitchen which may be used by student groups.

The South Women's Dormitories is a complex located in the area in front of the President's home on West Samford Avenue. Completely air-conditioned, the modern facility was opened in the fall of 1962 and includes three dormitory buildings (A, B, and C), a dining hall and administration building. Eventually, ten dormitories will be built to complete this dormitory group.

Each of the three-story dormitories houses 110 girls. The rooms are arranged in suites with a connecting bath between each two double rooms. Each room is furnished with twin beds, a bedside table, two desks and desk chairs, a double dresser and an easy chair. A formal lounge and an informal lounge are in each dormitory, with study rooms on each floor.

The administration building, similar to Social Center, houses the office of the Head of Women's Housing, the cashier's office and the post office for this area. There are several attractive lounges in the building.

All students provide their own bed linens and any other items they may wish to use to make their rooms more attractive.

**Room and board** in all non-air-conditioned Women's Dormitories is \$180.00 per school quarter. Room and board charges in the new air-conditioned dormitories is \$200.00 per school quarter. All women students are required to take meals in the dormitory dining halls and board charges which are \$110.00 per quarter are subject to payment of applicable sales tax.

**Room Reservations.** Women students wishing to reserve a room in University housing must send a deposit of \$25.00 to the Head of Women's Housing. No reservation is binding until the fee has been received. Reservations

for the following Winter, Spring, Summer and Fall quarters will be accepted on or after October 1 of each year.

Room reservation fees may be refunded when: (1) Fall Quarter reservations are canceled on or before August 15 preceding the beginning of the Fall Quarter; (2) Winter Quarter reservations are canceled on or before December 15; (3) Spring Quarter reservations are canceled on or before March 1; (4) Summer Quarter reservations are canceled on or before May 15; (5) room is vacated at the end of the quarter and no further reservations are desired. No refund of reservation fees will be made under circumstances other than those outlined above.

## Married Students

Auburn University operates two housing projects for married students:

**Forest Hills Apartments** — 240 modern units, 80 two-bedroom and 160 one-bedroom furnished apartments. Furnishings include an all-electric kitchen, completely furnished living room and bedroom, spacious closets, ample cabinets, all-tiled bath with shower-tub combination, inner-spring mattresses, steam heat, TV outlet, etc.

Deposits are accepted for Forest Hills Apartments from prospective married male students who have been accepted for admission.

**Graves Centre Apartments** — 90 temporary units partly furnished. One, two and three bedrooms.

Deposits for Graves Centre Apartments are accepted only from married male Auburn undergraduates.

For additional information write: A. A. Miller, Housing Manager, 901 West Thach Avenue, Auburn, Alabama.

The Student Affairs Office, 101 Samford Hall, maintains a registry of privately owned apartments and will be glad to assist incoming students in locating suitable housing. All arrangements should be made before the student brings his family to Auburn.

## *Expenses and Financial Aid*

Under the land-grant institution philosophy of education for all, Auburn's fees have remained low. Student charges are 17 per cent lower than similar fees charged in the Southeast and the nation as a whole. They have remained almost static over the past five years, a situation unique at Auburn in view of other rising costs.

Since living expenses are an integral part to be computed in college costs, subsistence at Auburn University is also considerably less than at comparable schools across the nation. Board and room for men figure at some 31 per cent less than the average, with women paying 21 per cent lower costs.

Auburn University reserves the right to deny admission to or drop any student who does not meet his financial obligations to the institution.

Fees are payable in advance at the beginning of each quarter registration as follows:

## Basic Quarterly Charges For Regular Undergraduate Students

	University Fee	Student Activities Fee	Total
All curricula	\$91.50	\$8.50	\$100.00

The University Fee is used to meet part of the cost of instruction, physical training and development, the cost of necessary laboratory materials and supplies for student's use, maintenance and operation of the physical plant, the Library and the Student Health Service.

The Student Activities Fee supports affairs on the campus, namely, inter-collegiate athletics, Auburn band, debating, dramatic arts, glee clubs, Glomerata, intramural sports, Plainsman, religious life, social affairs, student government, and Student Union Building Fund. This fee includes 50 cents which will be held in reserve to cover unnecessary damage to University property by students. Any unused portion of this amount will revert to the credit of the activities listed in this paragraph.

## Other Fees And Charges

<b>Non-Resident Fee</b>	\$100.00
Non-resident students, with the exception of sons and daughters of ministers, are required to pay a tuition fee each quarter.	
<b>Service and Penalty Charges for Late Registration</b>	2.00 to 15.00
(a) Students required to pre-register and who fail to pay fees at scheduled dates (from end of pre-registration dates to beginning of classes)	2.00
(b) All full-time undergraduate students from beginning of classes through last date for new registration for quarter	5.00
(c) Students failing to complete registration by payment or making satisfactory arrangement for fees with the Bursar by last day for new registrations for the quarter will be dropped from classes and may be reinstated by payment of late fees and, in addition, penalty charges of \$1.00 per elapsed class day, up to a maximum penalty of \$10.00 plus late fee.	Maximum 15.00
Late fees and penalties for graduate students and part-time students taking less than 10 quarter hours begin one week later than for undergraduates.	
<b>Special Examination or Equivalency Examination Fee (each)</b>	5.00
<b>Re-examination Fee (each)</b>	2.00
<b>Change in Curriculum Fee</b>	5.00
<b>Change in Course Fee</b>	1.00
This charge is made for each separate change with dean's permission after classes begin.	
<b>Room and Board (Women)</b>	180.00 to 200.00
All women students, except those granted special permission by the Dean of Women, are required to live in dormitories and take their meals at the Women's Dining Halls. (Add sales tax for board.)	

<b>Room and Board (Men)</b>	180.00 plus
Residents in the dormitories for men may elect to take their meals in the dormitory dining halls, or elsewhere. Men students may also live off-campus. For further information see page 78.	
<b>Laundry and Dry Cleaning (optional)</b>	20.00
Optional for both men and women. Refunds, when deemed advisable, may be made during the first two weeks of the quarter. Thereafter, refunds will be made only in the case of resignation of the student. This service, furnished by Young's Laundry of Auburn, includes laundry, pressing, dry cleaning.	
<b>R.O.T.C. Uniform and Equipment Deposit (refundable)</b>	30.00
All students, both Basic and Advanced, are required to deposit the sum of \$30.00 with the Bursar of the University, prior to enrollment in R.O.T.C. They are then furnished a uniform in good condition and other necessary supplies through the R.O.T.C. Supply Office. Upon completion of the R.O.T.C. course of instruction, or upon withdrawal of the student therefrom, the uniform and other supplies are turned in and the deposit returned to the student, less \$1.50 per quarter withheld by the Bursar of the University to cover the cost of cleaning and repair of uniforms, when applicable and to support R.O.T.C. activities as follows: scholarship and marksmanship awards; special apparel and equipment for competitive drill teams and rifle teams; approved travel for drill teams and rifle teams representing Auburn University R.O.T.C.; uniforms for sponsors; the official annual Military Ball in an amount not to exceed \$.40 per cadet enrolled that quarter. This charge is subject to change in accordance with demands of the Army, Navy and Air Force training programs.	
<b>Handling Charges (each)</b>	1.00
(a) Registration fees billed home.	
(b) Unhonored checks returned from bank.	
(c) Delayed payment of registration fees.	
Arrangements for paying registration fees and charges should be worked out in advance with the University Bursar.	
<b>Chemistry Breakage Card or Pharmacy Breakage Card (refundable) each</b>	2.00
<b>Microscope Purchase</b>	
Students entering Veterinary Medicine are required to own a microscope prior to admission. (See section on Veterinary Medicine.)	
<b>Music Fees</b>	
Applied Music — one ½ hour lesson per week	20.00
Applied Music — two ½ hour lessons per week	30.00
Applied Fundamentals of Music	
(Class instruction in piano or violin)	5.00
Practice Fee — per quarter — one hour per day	3.00
two hours per day	5.00
Instrumental Rental Fee — per quarter	3.00

**Field Training Course in Home Economics**

Charged one-half of regular University and non-resident fee.  
 (Student Activities Fee optional. If paid, full fee is charged.)  
 This applies to Retail Training — HE 335

**Special Pilot Training Fees**

AA 500 Private Pilot Training — Flight, estimated	500.00
AA 406 Commercial Pilot Training — Flight, estimated	2,100.00
AA 423 Flight Instructor Training, estimated	500.00

(Subject to change without notice)

For description of these courses see section on Aeronautical Administration.

**Graduation Fee** 10.00

Payable at beginning of the quarter in which the student is a candidate for a degree.

**Duplicate Diploma Fee** 5.00**Thesis Only** 5.00

Non-credit course and/or fee for registration to clear incompletes when University facilities are used.

**Thesis Binding Fee (per copy)** 2.50

Three to five copies are usually required.

**Doctoral Dissertation Microfilming Fee** 25.00**Transcript Fee** 1.00**Part-time Undergraduates and Unclassified per hour** 6.00

Not to exceed 9 hours. No non-resident fee charged. Student Activities Fee optional. If more than 9 quarter hours carried, full undergraduate fees are payable. Six-week courses of 5 or more quarter hours call for payment of one-half regular undergraduate fees for a quarter. Such students are entitled to student health service.

**Graduate Students per hour** 6.00

Student Activity Fee optional, no non-resident fee charged. Graduate students are entitled to student health service.

**Auditing Fee (per subject)** 5.00

Any student who pays less than full fees must pay this fee for auditing a subject. (Not charged to faculty members.)

**Correspondence Study Course Fees (each course, first hour)** 10.00

For each additional credit hour 5.00

**Internship Fee — Veterinary Medicine**
(off campus) 3.00  
(on campus) 12.50
**Nursery School and Kindergarten**

Nursery School Group, 9 a.m. to 12 noon (per quarter) 22.00

Nursery School Group, 9 a.m. to 1 p.m. (per quarter) 35.00

Kindergarten Group, 1 p.m. to 4 p.m. (per quarter) 22.00

For application information, contact Head of Dept. of Family Life and Early Childhood Education.

### Registration Canceled and Fees Refunded

If a student pre-registers for the next quarter, then withdraws prior to the opening of the quarter, all fees are refunded. If a student resigns within the first two weeks after classes begin, all fees, less charges, will be refunded except the sum of \$7.50 which will be retained as a registration fee, and except the sum of \$5.00 paid as student health fee if the student has participated in any part of the student health program. If a student remains in school longer than two weeks after classes begin, no refund will be made of any fees applying for that quarter except on resignations caused by personal illness or call into military service.

## Financial Aid At Auburn

Auburn University has established an **Office of Student Financial Aid** to provide financial assistance to aid worthy students in meeting educational costs incurred while attending Auburn University.

A pamphlet describing scholarship and loan funds may be obtained by writing to the Office of Student Financial Aid, Auburn University.

Sources of aid not available through the Office of Student Financial Aid are as follows:

Students with physical handicaps may obtain grants-in-aid covering University fees, books, supplies, and, in some cases, general maintenance through the **Vocational Rehabilitation Service**. Federal and state appropriations support this service. For information and application blanks, contact Mr. Frank Jenkins, District Supervisor, Vocational Rehabilitation Service, 110 Thach Hall, Auburn, Alabama.

To promote scholarship and research among graduate students, a number of **Teaching Fellowships**, **Graduate Assistantships**, and **Research Fellowships and Assistantships** carrying substantial stipends are available. Apply not later than March 15 for the following September. Contact the Dean of the Graduate School for information and application blanks.

The U.S. Navy offers to a number of students tuition and fees, plus an allowance for expenses, for four years. Recipients are determined after nation-wide selection. They enter college as midshipmen, USNR, under the regular NROTC program. In return for this aid, they must complete four years of Naval Science, make all required summer practice cruises, and upon graduation accept a commission as ensign, U.S. Navy, or second lieutenant, U.S. Marine Corps. The Secretary of the Navy establishes the criteria for voluntary termination of an officer's status to meet the needs of the naval service. At the present time a required minimum active duty service period of 4 years has been established by the Secretary of the Navy.

In addition to the NROTC program, the U.S. Navy and U.S. Marine Corps have included Auburn University in the **Navy Enlisted Scientific Education Program**. This program offers enlisted members of these two services the opportunity of obtaining a baccalaureate degree in scientific fields. Upon graduation they are offered an appointment as ensign, U.S. Navy, or second lieu-



tenant, U.S. Marine Corps. All books, tuition and fees are paid and the participants are retained on active duty with normal pay and allowances. This program was inaugurated in 1958. At the present time the required minimum active duty service after commissioning is four years.

## Employment Service

The University Personnel Office assists students in obtaining employment to defray a portion of their educational expenses. The University, however, does not advise freshmen to attempt work during their first quarter on campus unless it is essential. Earnings vary with the job requirements and previous work experience. Since employers must know when a student is free for work, little assistance can be given any student until his class schedule is known.

The Personnel Office functions only as a referral agency and cannot promise jobs to students; however, every attempt is made to place capable students needing work.

Students are also assisted in locating full-time summer employment at resorts, national parks, camps, with governmental agencies and in business and industry. Information and applications for such employment should be secured early in the Winter Quarter.

The University Personnel Office also assists student wives in locating employment both on and off the campus. Inquiries should be directed to the University Personnel Office, Mary Martin Hall.

## Co-operative Education Program

The Co-operative Education Program provides opportunities for students to alternate quarters of academic study with quarters of experience in industry, business, and government positions.

The coordination of academic study and work experience combines theory and practice in the educational process. As a consequence, students find more meaning in their studies and their motivation is increased. The industrial experience contributes to the development of a sense of individual responsibility. The student's judgment and maturity also develop more fully, and a better appreciation of the importance of human relations is gained. Since the employer pays the student a wage or salary during the industrial quarters, this assists the student considerably in his educational expenses.

The Co-operative Education Program is a five-year plan. A student must complete at least two quarters of the freshman year with an above-average scholastic record before he is placed in industry. Transfer students are also considered for the program. Normally a student has seven quarters in industry, and during the senior year he remains in continuous residence in school.

The program is offered in aerospace, chemical, civil, electrical, industrial, and mechanical engineering, applied physics, physics, aeronautical administration, textile management and textile science, business administration, mathematics, and pharmacy.

Additional information and a booklet describing the program may be secured from the Director, Engineering Extension Service.

## Educational Benefits For Veterans

Many current publications describe in complete detail the educational programs authorized by Congress under the following federal acts: Public Law 346 (G.I. Bill of Rights), Public Law 16 (Vocational Rehabilitation), Public Law 550 (Readjustment Assistance Act of 1952), Public Law 894 (Vocational Rehabilitation Revised), Public Law 634 (War Orphans Educational Assistance Act).

Auburn University is fully approved by the Veterans Administration to give training under these laws. Veterans planning to attend school under one of these laws should make application directly to the Veterans Administration and get prior approval before entering school.

Those entering school under the benefits of any one of the laws should have sufficient funds to finance themselves for one quarter or at least until payments begin coming in from the Veterans Administration (approximately two months).

For further information write to the Office of Student Financial Aid, Auburn University, Auburn, Alabama.

## *Student Services*

The Dean of Student Affairs, the Dean of Women and their respective staffs assist students with their problems and aid them in their adjustment to University life. Their offices serve as a general clearing house for matters pertaining to the welfare of all students.

The Dean of Student Affairs supervises all projects supported by the student activities fee and works mutually with students or groups on campus problems. The Dean's office is located in the Mary E. Martin Hall.

The Dean of Women's duties include matters pertaining to the welfare of all women students. As Social Director she approves all social functions that University women attend. The Dean's offices are located in the Social Center.

Each academic dean, either personally or through appointed assistants, guides each student in his academic problems, especially in arranging schedules, maintaining continuation in residence requirements, and satisfying subject-matter degree requirements.

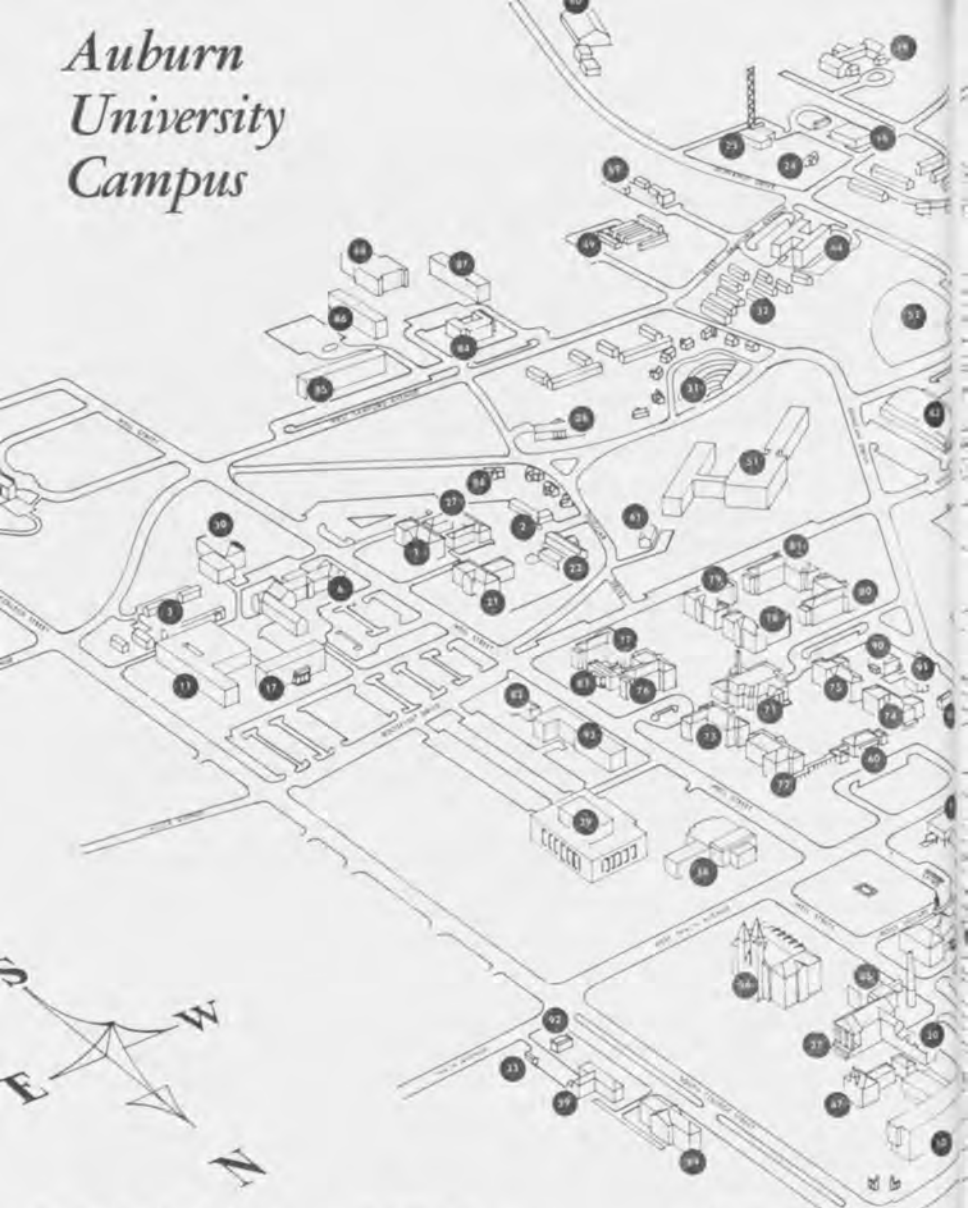
The Registrar and his staff counsel students regarding registration, academic records, graduation requirements, and Selective Service regulations. The Registrar's Office is located on the ground floor of the Mary E. Martin Hall.

## Counseling Service

In addition to the counseling services offered throughout the University, a variety of services is provided for all students free of charge by the Student Counseling Service in Langdon Hall. Students may come by the offices in person to make an appointment or call University Extension 321. The offices are open from 8 a.m. to 12 noon and 1 to 5 p.m., Monday through Friday.

The staff of the Student Counseling Service perceives counseling as a process in which the student comes to the counselor voluntarily to gain additional self-understanding that he may solve his own problems as they arise

# Auburn University Campus



## KEY TO BUILDINGS

1. Agricultural Engineering
2. Agricultural Engineering Garage
3. Agronomy and Soils
4. Air Force Supply
5. Alumni Gymnasium
6. Animal Science and Dairy Bldg.
7. Army-Navy Hangar
8. Athletic Field House
9. Auburn Union
10. Biggin Hall
11. Funchess Hall
12. Broun Hall
13. Buildings and Grounds
14. Burke Laboratory

15. Cary Hall
16. Cliff Hare Stadium
17. Comer Hall
18. Dairy Barns
19. Drake Infirmary
20. Dramatic Arts Shop
21. Duncan Hall
22. Duncan Annex
23. Dunstan Hall
24. Educational TV Offices
25. Educational TV Studio
26. Electrical Lab
27. Farm Machinery Annex
28. Fish Culture Lab
29. Food Service Building
30. Forestry Building

31. Graves Amphitheatre
32. Graves Apartments
33. Building removed, 1963
34. Industrial Engineering Shops
35. Isolation Disease Lab
36. "L" Building
37. Langdon Hall
38. Martin Hall
39. Library
40. Meats Lab, Abattoir
41. Bullard Hall
42. Magnolia Hall
43. Noble Hall
44. Plainsman Hall
45. Miller Hall
46. Music Annex



now and in the future. The counselors do not perceive themselves as advisors, but as individuals who are concerned with helping students find solutions to their problems. The counselors respect the ability of the students to make their own choices after they have a better understanding of themselves.

**Educational Counseling.** In addition to the academic departmental advisors of the University, the Student Counseling Service provides services to students who are having academic difficulties. Attempts will be made to determine the causes of the difficulty. Counselors help students in study habits, note taking, listening skills. Educational Counseling is interrelated with other areas, and only by a complete understanding of all problems can a student's academic difficulties be alleviated.

**Personal Counseling.** Many University students have personal concerns which may interfere with their academic success. Counselors attempt to offer an atmosphere in which students may discuss such problems freely and confidentially. Personal emotional adjustment, dating, marriage, home relationships, social relationships, adjustment to college work, and plans for the future are only a few of the many concerns. Often, effective solutions can be reached by a student through a counselor-counselee relationship.

**Career Counseling.** Counselors assist students in making a thorough self-appraisal of interests, abilities, and personality traits so that they may utilize this information in making a wise career choice. Counselors interpret the data from tests, discuss all possibilities of success, and help the student work through the decision-making process. The Career Information Library maintained in the Student Counseling Service is available to all students for use without appointment. Students who are indecisive about a major, or who wish information on their adaptability to selected programs of study may gain a realistic appraisal of themselves through counseling and become better equipped to make more intelligent academic choices.

## Graduate Placement Service

A Graduate Placement Office, established by the Alabama Department of Industrial Relations, is jointly operated by that department and Auburn University to assist graduates in obtaining employment in their chosen professions following graduation. This office brings numerous representatives from industrial and commercial concerns, and governmental agencies to the campus each quarter for personal conferences with students. Students who desire information and assistance should confer with the Graduate Placement Director, Mary E. Martin Hall.

## Student Health Service

The Student Health Service of Auburn University renders the following services: (1) out-patient medical and surgical service by staff doctors only; (2) hospitalization at the University Infirmary; (3) local ambulance service; (4) medical supervision of the physical education and athletic programs; (5) health education; and (6) campus sanitation. These services are administered by the medical staff of the Health Service.

The University owns and operates a 65-bed infirmary equipped with a modern clinical laboratory and X-ray facilities. Working in conjunction with the State Health Department annual chest X-rays are given to students, faculty members and employees of the school. After physical evaluation of each student, recommendations are made to the student, to the dean of his respective school, to the physical education department, and to the military department.

Each entering student is required to file a physical examination report completed by his private physician before he can be admitted to Auburn University. Forms for this report will be furnished by the University.

No major surgery is performed in the Infirmary. Elective surgery should be performed in the student's home town, or by referral to a specialist during vacation periods or to a local surgeon. Emergency surgical operations are the responsibility of the student. Students who are in need of emergency operations and those having severe multiple or compound fractures will be referred for treatment and the expense will be a responsibility of the student. The University has available a surgical consultant who may be called when needed. The expense will be charged to the student requiring such consultation.

The Student Health Service is available to all regularly enrolled students of the institution. Medical service is not provided by the University for the families of married students, but a list of local physicians will be made available by the Student Health Service upon request.

The Out-Patient Clinic is open from 8:00 a.m. to 11:30 a.m. and 1:00 p.m. to 4:00 p.m. each week day, Monday through Friday. Clinic hours are from 8:00 a.m. to 11:30 a.m. on Saturday, and 8:30 a.m. to 9:30 a.m. on Sunday. Emergency treatment is available 24 hours daily. Visiting hours at the Infirmary are from 10:00 a.m. to 1:00 p.m., 3:00 p.m. to 8:00 p.m. each day. Only two visitors per patient are allowed simultaneously.

University physicians do not make calls outside the Infirmary or attempt to treat students in their rooms. Students who are too ill to come to the Infirmary will be furnished with local ambulance service. Parents will be notified by the University physician if a student is believed to be seriously ill.

Each student is entitled to 15 days free hospitalization at the University Infirmary during each school year. This includes professional services of the medical staff of the Student Health Service, general floor nursing care, ordinary medications, room and board, linen, routine laboratory and X-ray procedures.

The Student Health Fee does not include surgery, consultation, special X-rays, special medications, or special nurses. A charge is made for these, but only an amount sufficient to cover the cost.

The services of local physicians are available at the student's expense either at his place of residence or when he is properly admitted to the University Infirmary.

The Student Health Service is not available to students during the following vacation periods: Christmas holidays and the periods between the close of the Summer Quarter and the opening of the Fall Quarter.

During epidemics, the staff of the Student Health Service will make every possible effort to care for ill students at the Infirmary, but if Infirmary staff and facilities should be inadequate, the University will not assume responsibility for payment of services rendered by outside doctors or other hospitals.



## Speech And Hearing Clinic

The Speech and Hearing Clinic of the Department of Speech provides a full range of services for children and adults. Special services are provided for students and student families including comprehensive speech and hearing examinations. Students with speech problems, stuttering for example, or hearing problems are urged to contact the Speech and Hearing Clinic during their first quarter of residence. Further, the Speech and Hearing Clinic carries on a continuing program to provide assistance for all foreign students for whom English is a second language. Appointments may be made in Room 201 Samford for speech and/or hearing examinations on any school day. No fees are charged for student or related services.

## Student Bookstores

Alpha Phi Omega service fraternity sponsors a non-profit bookstore on the campus. The purpose of this store is to provide a more economical means for students to purchase and sell their books. The bookstore is located in the sub-way of the "L" building. A University bookstore is located in the Auburn Union.

## Student Insurance

The Student Group Accident and Sickness Insurance Program, underwritten by the Transit Casualty Company, Chicago, Illinois, is designed to provide the student maximum coverage at minimum cost. A new benefit, offered for the first time in 1963-64 is the provision for tuition and fee refunds on a prorated basis should a student be required to withdraw from school by reason of accident or sickness.

# Student Activities

## The Student Body

The student body, composed of all Auburn undergraduate students, has elected officers. It is divided into three branches, working cooperatively for the betterment of the students of Auburn, and students are encouraged to take part in the political life of the campus.

## Student Government

The three-branch ruling organization for student government is elected each spring. Its purposes include controlling extra-curricular activities, providing members for joint student-faculty committees, and representing student opinion to the administration.

Student government is made up of the executive, legislative and judicial branches. The executive group is composed of the President, Vice President, Secretary, Treasurer, and members of the Executive Cabinet. The fourteen cabinet members are known as Superintendents and are appointed by the President and approved by the Senate. In addition, there may be advisory committees to the President.

The legislative branch, the Student Senate, is composed of members elected according to class. Students with opinions to present, refer their suggestions to the class senators, who will bring them before the Senate.

The Student Jurisprudence Committee has one presiding Justice and six student Associate Justices and is vested with the Judicial power of the Student Body. The committee interprets the Student Body constitution and renders decisions.

## Women's Student Government Association

The purpose of the Women's Student Government Association is to uphold high standards of scholarship, and to create, promote and maintain a high sense of honor and integrity in all phases of University life.

Each Auburn co-ed is automatically a member and vital part of WSGA when she enters Auburn University. The WSGA is made up of four councils: the Executive, Legislative, Judiciary, and Dormitory House Councils. The Legislative Council is composed of representatives of each dormitory.

The WSGA plans and carries out a well-organized program for women students.

## Student Publications

The Auburn Engineer — published monthly for and by students in Engineering.

The Auburn Pharmacist — published quarterly by Phi Delta Chi, professional Pharmacy fraternity.

The Auburn Veterinarian — booklet published quarterly for and by students in Veterinary Medicine.

The Glomerata — student annual publication; production costs covered by Student Activities Fees, student organizations and advertising.

The Helm — a monthly paper published by NROTC students.

The Plainsman — a weekly paper published by students of the institution; production costs covered by Student Activities Fee and advertising.

The Tiger Cub — annual student handbook; production costs covered by Student Activities Fee and advertising.

## The Auburn Union

The Auburn Union is the center of non-academic student and faculty life. The building, located in the heart of the campus, provides a living room for students away from home — a place to relax, to entertain friends, and to find convenient dining and school supply services. Planned programs of social, recreational and cultural events help develop students in the art of human relations.

Located in the Auburn Union are the War Eagle Cafeteria and Snack Bar, Alumni Offices, Faculty Club, Student Government Offices, Publications Offices, University Book Store, Union Ballroom, meeting rooms for student organizations, commuters lounges, banquet rooms, reading and TV lounges, and Union staff offices.

The main desk has become the central information center on campus. On hand are the registration cards of each student enrolled, listing class schedule, home address, and campus address.

## Religious Organizations

The student religious organizations of the churches of Auburn provide opportunity for worship, participation in religious programs, wholesome recreational and social activity and closer personal association with members of the faculty. These organizations are: Baptist Student Union; Disciples Student Fellowship (Christian Church); Church of Christ's Young People's Organization; the Canterbury Club of the Episcopal Church; Legion of Mary and the Newman Club of the Catholic Church; Gamma Delta, the International Association of Lutheran Students; Wesley Foundation of the Methodist Church; Westminster Fellowship of the Presbyterian Church; Hillel Counselship of the Jewish Faith; Liahona Fellowship of the Reorganized Church of Jesus Christ of Latter Day Saints; the Christian Science Organization; and Unitarian-Universalist Fellowship.

The Religious Life Committee, composed of students, faculty and staff of the University, serves as a functional organ for promoting and sponsoring all campus-wide religious activities in which operational coordination is needed to give the best benefits to the students of Auburn University.

## Independent Organizations

Towers. Towers is a social and service organization for women students not affiliated with a social sorority. It was organized in 1958 and its aims are: to maintain close sorority and independent relationship at Auburn; to encourage leadership and scholarship among members and affiliates; to provide an outlet for non-affiliated women students; to promote University projects that benefit the entire student body.

## Cultural, Musical, Theatrical Activities

**Lecture and Concert Series.** An outstanding array of concert artists and nationally known lecturers is presented each year for the enjoyment and cultural development of Auburn students. These events are financed by the student activities fee, admitting students without charge upon presentation of student ID cards.

**Auburn Bands.** The Auburn marching and concert bands hold high places in the ranks of the nation's best collegiate groups. The **Marching Band**, which frequently accompanies the football team on its trips to games, and which represents the University at various campus, state, and out-of-state functions, normally consists of approximately 125 players who receive special training in drill formations. Physical Education may be waived during the Fall Quarters for students who are members of the Marching Band.

The **Concert Band** consists of advanced students who have passed the work of the preliminary bands, and students who are preparing to teach band in the schools. It provides music for various University activities and some off-campus functions such as concert tours. Regular training which embodies instruction in the rudiments of music and the use of band instruments is given free of charge at the band practice periods. These activities may be taken with or without degree credit.

**Auburn Orchestra.** The Music Department sponsors this symphonic group for the development of musical talent and perfection of individual achievement in ensemble playing. Students in the early stages of musical training, especially those in violin, viola and cello, are invited to participate. Membership is by permission of the director. This activity may be taken with or without degree credit.

**Glee Clubs.** The Men's Glee Club, the Women's Glee Club, the Mixed Chorus and the Concert Choir offer students an opportunity to sing. These groups give concerts here and about the state. College credit is allowed for these activities. All choral groups make regular appearances on Educational Television, perform off-campus concerts, and take short tours.

**Opera Workshop.** The Workshop is open to all students interested in musical or dramatic work in producing operas. Membership is open with or without degree credit, training students in the various phases of operatic production largely through actual stage performances of outstanding operas. Each year the group produces several operas sung in English.

**Auburn Players.** This theatrical group presents plays during the year for the students and townspeople. Nearly 50 performances are presented in the five productions presented annually.

**Auburn Dance Corps.** A co-recreational, performing group presenting three productions each year: Fall Dance Concert; Winter Musical Comedy or Play; Spring Dance Festival. Membership is open to all men and women interested in Dance.

**Dolphins.** The Dolphin Club was organized for both men and women students interested in synchronized swimming. A water show is presented each spring.

**Educational Television.** Programs produced in Auburn's TV studios are seen over most of the state through the Alabama Educational Television Network. Staff members from all three divisions of Auburn take part in this programming. The Department offers vast opportunity for Auburn students in this field, either through regular courses, or positions for observation or employment in either the technical or program production areas.

## Intramural Sports

Intramural sports offer students many opportunities to participate in competitive team and individual sports, and recreational activities. Healthful sports, good sportsmanship, and friendly competition are stressed. All students are urged to participate in the program which is entirely voluntary and largely student-supported and supervised.

Regular tournaments are offered in seasonal team and individual sports.

**Fall Quarter.**—Touch football, swimming, volleyball.

**Winter Quarter.**—Basketball, bowling, table tennis.

**Spring Quarter.**—Badminton, golf, softball, tennis, track.

**Summer Quarter.**—Softball, tennis, golf, swimming.

Intramural Sports for Men also operates a **check-out service** in the basement of the Auburn Union Building. Any student may check out athletic equipment either on a 24-hour basis or over weekends.

## NATIONAL HONOR SOCIETIES

The following members of the Association of College Honor Societies have established chapters at Auburn:

Alpha Epsilon Delta (Pre-Medicine)  
Alpha Lambda Delta (Freshman Scholastic—Women)  
Chi Epsilon (Civil Engineering)  
Delta Sigma Rho—Tau Kappa Alpha (Forensics)  
Eta Kappa Nu (Electrical Engineering)  
Mortar Board (Student Leadership—Senior Women)

Omicron Delta Kappa (Student Leadership—Junior and Senior Men)  
Phi Eta Sigma (Scholarship—Freshman Men)  
Phi Kappa Phi (Scholarship—Senior Men and Women)  
Pi Tau Sigma (Mechanical, Aerospace Engineering)  
Rho Chi (Pharmacy)  
Sigma Pi Sigma (Physics)  
Tau Beta Pi (Engineering)

### Other National Honor Societies:

Gamma Sigma Delta (Agriculture)  
Kappa Delta Pi (Education)  
Omicron Nu (Home Economics)

Pi Mu Epsilon (Mathematics)  
Psi Chi (Psychology)  
Xi Sigma Pi (Forestry)

## NATIONAL RECOGNITION SOCIETIES

The following national societies have chapters established at Auburn:

Alpha Phi Omega (Campus Service—Men)  
Alpha Zeta (Agriculture)  
Arnold Air Society (Air Force ROTC)  
Angel Flight (AFROTC Coed Auxiliary)  
Cwens (Student Leadership—Sophomore Women)  
National Block and Bridle (Animal Science)  
Omicron Delta Epsilon (Economics)  
Pershing Rifles (Air Force ROTC Basic Cadets)

Phi Beta Lambda (Business Education)  
Phi Lambda Upsilon (Chemistry)  
Phi Zeta (Veterinary Medicine)  
Pi Sigma Epsilon (Marketing)  
Pi Tau Pi Sigma (Signal Corps ROTC)  
Scabbard and Blade (Military)  
Sigma Tau Delta (English)  
Steerage (Navy ROTC)

## CAMPUS LEADERSHIP AND SERVICE ORGANIZATIONS

"A Club"—Varsity lettermen in baseball, basketball, football, track or cheerleading.  
Auburn Veterans Association—Service Organization open to veterans of the Armed Services.  
Circle "K" Club—International Service Club for college men sponsored by Kiwanis International.  
Spades—Honor Society of ten most outstanding senior men.  
Squires—Honor Society for most outstanding sophomore men.  
Towers—Independent Women's Service and Social Organization.

## DEPARTMENTAL AND PROFESSIONAL ORGANIZATIONS

Agricultural Council	Delta Sigma Pi (Business Administration)
Agricultural Economics Club	Education Council
Agromony Club	Forestry Club
*American Association of Textile Colorists and Chemists	Four-H Club
American Chemical Society	Future Farmers of America
American Institute of Aeronautics and Astronautics	Home Economics Council
American Institute of Architects	Horticulture Forum
American Institute of Chemical Engineers	Industrial Design Forum
American Institute of Electrical Engineers	Institute of Electrical and Electronic Engineers
American Institute of Interior Designers	International Relations Club
American Pharmaceutical Association	Junior American Veterinary Medical Association
American Society of Agricultural Engineers	Kappa Epsilon (Pharmacy, Women)
American Society of Civil Engineers	*Kappa Psi (Pharmacy)
American Society of Mechanical Engineers	Lambda Tau (Medical Technology)
Art Guild (Visual Arts and Industrial Design)	Omicron Kappa Pi (Decor Club)
Auburn Camera Club	Pharmacy Council
Auburn Debate Council	Phi Delta Chi (Pharmacy)
Auburn Engineers Council	Phi Delta Kappa (Education, Men)
Auburn Historical Society	Phi Mu Alpha—Sinfonio (Music)
Auburn Players (Dramatics Club)	Phi Psi (Textiles)
Auburn Soccer Club	Physical Education Club
Auburn Speleological Society	Poultry Club
Auburn Student Education Association	Pre-Veterinary Medical Association
Auburn Tiger Sharks (Skindiving)	*Salle D'Armes Fencing Club
Association for Childhood Education	Scarab (Architecture)
Builders Guild (Building Construction)	Society for Advancement of Management Science and Literature Council
Caissons Club (ROTC Artillery, Advanced Cadets)	Society of American Military Engineers
Chemistry Council	Spiked Shoe (Varsity Lettermen in Track)
Dairy Science Club	Sociology Club
Dana King Gatchell Home Economics Club	Track and Saber (ROTC Army Advanced Cadets)
Delta Omicron (Music, Women)	Women's Recreation Association

\* Organizations marked by an asterisk are serving a trial period prior to official University recognition.

## STUDENT WIVES CLUB

Army Cadet Wives Club	Junior AVMA Auxiliary
American Institute of Architects Auxiliary	Keystones (Building Construction)
Auxiliary of Civil Engineers	Pharmacy Wives Club
Dames Club	Wives of Auburn Engineers
Forestry Wives Club	Wives of Industrial Management Students

## SOCIAL FRATERNITIES AND SORORITIES

The following national social fraternities have established chapters at Auburn:

Alpha Gamma Rho	Phi Gamma Delta
Alpha Psi	Phi Kappa Tau
Alpha Tau Omega	Pi Kappa Alpha
Delta Chi	Pi Kappa Phi
Delta Sigma Phi	Sigma Alpha Epsilon
Delta Tau Delta	Sigma Chi
Delta Upsilon	Sigma Nu
Kappa Alpha Order	Sigma Phi Epsilon
Kappa Sigma	Sigma Pi
Lambda Chi Alpha	Tau Kappa Epsilon
Omega Tau Sigma	Theta Chi
Phi Delta Theta	Theta Xi

The following national social fraternity has established a colony at Auburn: Beta Theta Pi (Beta Pi Colony).

The Interfraternity Council regulates the relationships between the member fraternities.

The following national social sororities maintain chapters at Auburn:

Alpha Delta Pi	Kappa Alpha Theta
Alpha Gamma Delta	Kappa Delta
Alpha Omicron Pi	Kappa Kappa Gamma
Chi Omega	Phi Mu
Delta Delta Delta	Pi Beta Phi
Delta Zeta	Zeta Tau Alpha

The Pan-Hellenic Council regulates the relationships of the sororities.



# University Regulations

## *Academic Regulations*

The student pursuing a degree program must fulfill a number of requirements specified by Auburn University. These concern such things as the number of courses he will take and the pattern they should follow. It will also concern his grades, conduct, and the amount of time he must spend in full-time work. Explanations of these requirements are presented in the following paragraphs.

## Class Enrollment And Attendance

### GENERAL REQUIREMENTS

**Class Attendance.** Students are expected to attend punctually every recitation, laboratory exercise, and other University duties.

**Registration.** The orientation of new freshmen and registration of new and previously enrolled students will be held each quarter as indicated in the University Calendar. A service charge will be made for registration after the official dates listed in the University Calendar. (See section on Fees and Charges, page 82.)

Every student is required to be registered in Auburn University in his quarter of graduation or in any other quarter when, in clearing an "incomplete" grade, working on a graduate thesis, or engaged in any other endeavor relating to his normal progress as a student, he makes use of the instructional staff and the facilities of the University. For such special registration, a fee of \$5.00 is charged. Registration in a correspondence course through Auburn University satisfies this requirement.

**Late Enrollment.** After the date specified in the University Calendar as the last day for new registrations, no student may register except by permission of his dean. The load of a student who registers late shall be reduced at the discretion of his dean and an extra service charge will be made. (See page 82 of the University Catalog.)

**Back Work.** In arranging a student's work for each year the dean will require him to schedule first the back work of the lower class or classes, but where this would work a serious hardship on the student the dean may make such exceptions as he deems necessary.

**Prerequisites.** If the first quarter of a course is prerequisite to the second, a student will not be allowed to register for the second quarter subject until the prerequisite is passed, except by special permission of the student's Dean. A grade of "Incomplete" in the prerequisite subject shall not prevent the student from registering for the advanced course, except in accounting, foreign languages, and freshman English, in which courses the first quarter's work must be passed before the succeeding subject may be taken. Each student is held responsible for correctly registering and is urged to check description of courses for full information as to required prerequisites.

**Student Load.** The normal quarterly load for a student for any year shall be the maximum number of credit hours prescribed in the curriculum for any quarter of that year. If approved or recommended by the dean, less than the normal load may be taken.

Any freshman or sophomore student, who for any reason is excused from ROTC and Physical Education, when the normal load is 17 hours, may be permitted to take a load of 18 hours inasmuch as no two-hour elective courses are available.

A student who carries not less than 15 credit hours in a quarter and passes all work carried in that quarter with a grade point quotient of 1.5 or more may schedule an overload not to exceed a total load of 23 quarter credit hours during the next quarter of residence at Auburn University, provided the overload is approved by the student's dean. The overload privilege will not be lost by the student who schedules fewer than 15 credit hours in an intervening quarter or quarters provided he passes all work carried with a minimum grade point quotient of 1.5 in each of the intervening quarters.

In the Summer Quarter, students taking courses on the term basis not eligible for the overload will be restricted to the prescribed quarterly load but may take, in one term: (1) one five-hour term course plus 10 hours of regular quarter courses; or (2) two five-hour term subjects.

A student registering for work in excess of the permitted load will be required to drop the overload during the official Change-in-Registration Period at the beginning of the quarter. If by oversight an overload is carried, the requirements for graduation will be increased by the number of credit hours carried in excess of the permitted load.

**Change in Program.** A student is required to have approval of his dean before changing his program of studies. A fee of \$1.00 will be charged for each change in schedule and \$5.00 for change in curriculum after classwork begins, except schedule changes made necessary by failure at the final examination period, or as a result of special examinations, or in special cases approved by the Registrar.

A grade of "Withdrawn" (W) will be assigned when the student drops a course with the permission of the dean within the first two weeks of a quarter, or when he is permitted for special reasons to drop the course without penalty after this period.

A grade of "Withdrawn Failing" (WF) will be recorded in the Registrar's Office for a subject dropped on request of the student after the second week of a quarter. Exceptions are made only as authorized by the dean.

A student's dean may make such substitutions as he deems necessary in the student's course of study. The student's load may also be reduced by the dean when circumstances seem to make it advisable.

**Classification.** A student will be promoted from one class to the next when he lacks not more than 10 hours of course work specifically required in his curriculum, as determined by his dean.

A student who has been awarded one baccalaureate degree and pursues another course for a second baccalaureate degree will be classified as an undergraduate student.

Students, who for reasons acceptable to the dean do not wish to pursue regular courses either as to load or curriculum, will be admitted as unclassified students.

**Auditing Privilege.** A person not regularly enrolled in the University may audit lecture courses or the lecture part of a combined lecture and laboratory course with the approval of the dean and instructor of the subject. The auditing privilege is not regularly permitted in laboratory or combined lecture and laboratory courses; however, in exceptional cases, with the approval of the dean and instructor concerned, persons not regularly enrolled may audit such courses upon payment of the auditing and laboratory fees. Auditors register with the dean and Registrar and are listed on the class roll but do not participate in classroom discussions, take tests or final examinations, or make reports and may receive no grades or credits. A fee of \$5.00 will be charged for auditing a lecture course. Regularly enrolled students carrying 10 hours or more and members of the faculty may audit lecture courses upon approval of the dean and the instructor concerned without payment of the auditing fee. Graduate students may audit only one course per quarter.

**Curriculum Transfer.** If a student transfers from one curriculum to another requiring fewer hours, a year of credit in the former will not carry more than a year of credit in the latter.

If a student transfers from one curriculum to another requiring more hours, the graduation requirements of the new curriculum must be met as far as hours and subject matter are concerned.

For students transferring from other institutions, credit will be allowed for ROTC and Physical Education satisfactorily completed, on the same basis as if the work were taken at Auburn.

A student who is excused for any reason from any subject will be required to substitute other approved work.

**Leave of Absence.** A student whose work is satisfactory — as reported by his instructors — may be granted a leave of absence to represent the University in the following activities: athletics, band, orchestra, glee club, debating or oratorical contests, dramatics club, thesis work, inspection trips, and such other University activities as the President or Council of Deans may approve.

**Resignation.** After the date carried in the University Calendar for reporting mid-quarter deficiencies no student may resign from school and escape the penalty of failure. After this date the dean shall contact the student's instructors to determine his scholastic standing at the time of resignation and report such standing to the Registrar. If the student is failing in over half his work he will be charged with one quarter of residence and the number of hours reported as failing.

When a student through illness or physical disability is forced to resign after mid-quarter and when this condition has been the main factor in causing scholastic deficiencies, discretionary power in determining whether a scholastic penalty is to be assigned shall not rest with the student's dean but with the Council of Deans. See "Rules and Regulations for Students" in The Tiger Cub for detailed regulations.

**English Requirements.** All students are expected to maintain a reasonable standard of good usage of English, oral and written. Instructors are directed to insist on correct and accurate speaking and writing in all class work.

Freshmen who, on the basis of scores made on the American College Tests, show lack of adequate preparation for Freshman English, must take special

preparatory work before being admitted to English 101. No substitution for the Freshman English requirement is permitted.

Credit in Freshman English Composition earned in another institution may be allowed on transfer, as follows, except that no grade less than "C" will be accepted:

1. If the transferee has less than four and one-half quarter hours credit in Freshman English Composition, no credit is allowed.
2. When the transferee has earned four and one-half quarter hours but less than nine, credit may be allowed for one five-hour course at Auburn, but any hours in excess of five shall not be counted toward graduation.
3. When the transferee has earned nine or more hours and has met the first year English Composition requirement of the other institution, credit may be allowed for both EH 101 and EH 102, provided the minimum of nine hours involves no duplication. A total of 12 hours may be accepted toward the graduation requirement when the 12 hours represent a continuous course sequence at one school. Students entering an undergraduate school at Auburn University after receiving a Bachelor's degree from another accredited college or university are excused from meeting these regulations.
4. No student failing a Freshman English Composition course at Auburn will be permitted to transfer credit from another school to offset that "F", but must repeat the course in residence at Auburn.

## PHYSICAL EDUCATION

**University Requirements.** Physical education is required for six consecutive quarters. Only one credit per quarter is permitted or transferable to meet the six-quarter requirement.

Unless otherwise approved by the student's Dean, each student who lacks physical education must register for an activity course in the first and succeeding quarters of residence until all requirements are met or until he becomes 26 years of age.

**Transfer Students.** Students transferring from an institution not requiring physical education will have their physical education requirements reduced by the number of full-time quarters (15 hours credit per quarter) in residence at the former institution. Students who transfer from an institution requiring physical education will have their physical education requirements reduced by the number of quarters of physical education completed at the former institution. Students who have not fulfilled the requirements in physical education at their previous institution will be required to do so at Auburn University before graduation.

**Health Classification.** A medical examination is required of all students before being admitted to classes. A card stating the physical condition of each student must be filed in the Infirmary and the Department of Health, Physical Education and Recreation before assignment of activities can be approved. Classifications are:

- (A) Regular - This classification permits the student to engage in any activity offered by the Department.

- (B) Adapted – This classification provides for the student with physical limitations which may restrict his participation in the regular program of activities.
- (C) This classification provides for the student with physical limitations requiring program adaptation to his individual needs. The student with this classification will register for Sports Education, PE 105 (no physical activity or very limited).

## Military Regulations

### RESERVE OFFICERS TRAINING CORPS

Three Military Services – Army, Navy, and Air Force – are represented by ROTC Units at Auburn. Entering freshmen may enroll in the ROTC of their choice at registration, subject to class capacities, except that enrollment in Naval ROTC is by competitive examination prior to registration.

Eligibility for enrollment in the Advanced Course of any ROTC will be subject to departmental policies, criteria, and quota limitations.

**Military Training (Basic ROTC).** Students enrolling in college for the first time and transfer students not otherwise excused are required to register for and attend scheduled military classes (Basic Course ROTC) in the first and succeeding quarters of residence until military training requirements have been met. Successful completion of the Basic Course (Army, Navy, or Air Force ROTC) is a prerequisite for graduation of all male students except as noted below:

a. Students physically disqualified for military service under standards prescribed by the Departments of Army, Navy, and Air Force, and as determined by the University Physician.

b. Veterans with 90 days or more honorable active military service in the U.S. Armed Forces eligible to attend under G.I. Bill of Rights or the Korean War Bill. See also paragraph (4) on page 103.

c. Students more than 23 years of age prior to enrolling at Auburn for the first time are excused from Basic military training.

d. Transfer students from institutions not requiring military training will have the basic military requirement reduced by the number of full-time quarters satisfactorily completed in residence at the former institution provided that military training will not be required if the student has completed five full quarters (minimum of 15 hours per quarter). A student who transfers from an institution requiring military training will have his basic military requirement reduced by the number of quarters of military training completed at the former institution. A transfer student contemplating advanced ROTC should consult with the head of the service in which he is interested.

e. Students with outstanding records in ROTC training at regularly established Junior ROTC Units, may be excused from the first year Basic Course provided the student applies for excuse and possesses a Certificate of Eligibility from the PMS of the Junior ROTC Unit. In no case will a student in this category be excused from more than the first year Basic Course. If so excused, enrollment in the second year Basic Course will be made at the beginning of the Sophomore year.

f. Students who are not citizens of the United States.

**Selective Service Deferments.** For regulations concerning Selective Service deferment based on enrollment in ROTC programs, see description carried in this catalog under the particular division: Air Science; Military Science; Naval Science.

**Military Service Credit.** Applicants who have served in the Armed Forces, upon submitting records to the Registrar on the official separation form, may be allowed credit toward advanced standing for service experience as follows:

(1) Courses completed in military service programs at the college level insofar as they fit into the student's curriculum as required subjects or as electives, as approved by the dean concerned.

(2) Officer candidate and special service training not strictly organized as college courses, and other formal or informal off-duty training. Credit may be allowed toward advanced standing by the dean after review by the Registrar and the dean concerned of the official separation record and, as required, after passing with satisfactory scores or grades any field or subject examinations given through the Armed Forces Institute or by the department concerned. Credit for college level General Educational Development Tests is allowed as approved by the dean concerned, except that no credit is allowed in English.

(3) Correspondence courses. Credit may be allowed for college level courses completed by correspondence through the Armed Forces Institute, institutions approved by the Armed Forces Institute, and other accredited institutions as approved by the dean concerned.

(4) Veterans eligible to attend under the G.I. Bill of Rights or the Korean War Bill will be excused from Basic ROTC training not previously completed and will be allowed college credit as follows:

Commissioned Officers — 24 Quarter Hours

Others — 6 Quarter Hours

(Duplicate credit is not allowed where ROTC courses have been completed prior to military service.)

Students who have completed a six-month Reserve Training Program (ACDUTRA) resulting in an honorable separation and who have not completed Basic ROTC requirements prior to military service will be given college credit for three quarters (usually the first year) of the ROTC Basic Course. Other students who have completed terms of military service resulting in an honorable separation, will be given college credit as follows:

For 6 to 12 months — Three quarters of the ROTC Basic Course (three quarter hours) usually taken in the first year.

12 months or more — The entire Basic ROTC Course (6 quarter hours).

Any such student who desires to enroll in the Advanced Course offered by the Departments of Air, Military, or Naval Science shall complete as much of the Basic ROTC Course as may be prescribed as prerequisite by the department concerned.

(5) The Basic ROTC requirement will be waived for successful completion of the training required to become a federally recognized officer in the National Guard of any state. A total of six quarter hours of credit will be allowed, including any Basic ROTC credit earned in residence.

(6) Students who have had active military service may receive credit in physical education as follows: for less than six months, no credit; for six months



to one year, one quarter hour in Functional Physical Education, PE 100; for more than one year, six quarter hours (less any completed prior to military service).

## Off-Campus Credit

### EXTENSION AND CORRESPONDENCE COURSES

The following regulations govern extension and correspondence courses: (1) Credit for undergraduate courses in extension and/or correspondence in the major subject or for requirements for the baccalaureate degree shall not exceed, including transfer credits so earned, 10 per cent of the total credit required. (2) Credit hours earned by correspondence or extension will be counted as any other credit hours earned toward meeting the requirements for graduation, but will not be included in the calculation for continuation-in-residence. Grade points will be assigned to such work toward meeting the requirements for graduation, but in no case will the number of grade points exceed the number of credit hours so earned. (3) Credit for extension and correspondence courses to be taken at Auburn or elsewhere must be approved in advance by the student's dean. (4) No student in residence may enroll for a correspondence course if he can schedule the course or a suitable substitute. (5) No student shall receive credit for correspondence work which, with courses taken in residence, makes a total load exceeding the maximum allowed under college regulations.

In addition to the above, students taking work under the Auburn University Correspondence Study Program are subject also to its regulations as outlined on page 71. For further information, course listing, and application form request a Correspondence Study Bulletin from the Director, Correspondence Study Program, School of Education, Auburn University.

### OFF-CAMPUS CENTER CREDIT

Permission to take work at a university off-campus center is at the discretion of the dean and within the established relationships between the center and the comparable school or college in the parent university of the center. It shall be the responsibility of the student to secure and file with his dean a statement from the center that he may use credit in the desired course toward meeting requirements for the appropriate degree assuming his enrollment at the parent university under comparable classification and circumstances.

## Examinations And Grades

### GRADING SYSTEM

Final grades are assigned as follows: A, Superior; B, Good; C, Acceptable; D, Passing; F, Failure. Grade points are assigned as follows: A - 3; B - 2; C - 1; D - 0; F - 0. For graduate students see Graduate School section.

A grade of "Incomplete" (IN) is assigned when the quality of work has been of passing grade, but the student has been prevented by illness or other justifiable cause from completing the work required prior to the final examination. If the student is both "Incomplete" in his work and absent from the final examination, the grade of "Absent Examination" (X) shall be assigned. When a grade of "Absent Examination" (X) is reported, the instructor shall indicate

whether or not the quality of work has been of passing grade. If passing, a grade of "X" is assigned; if not passing, the grade shall be "XF." Grades of "Incomplete" and "Absent Examination" in required subjects not cleared within one resident quarter shall be repeated. Graduate students shall remove incomplete grades within a reasonable time and will not be allowed to graduate with grades of "Incomplete" on their records. A student absent from a final examination for any reason other than personal illness must obtain an excuse from the Council of Deans in order to take the examination.

A grade of "Withdrawn" (W) will be assigned when the student drops a course with the permission of the dean within the first two weeks of a quarter, or when he is permitted for special reasons to drop the course without penalty after this period. A grade of "Withdrawn Failing" (WF) is assigned to a course dropped with penalty.

If a student is dropped for excessive absences, a grade of "FA" is assigned.

### EXAMINATIONS AND REPORTS

Examinations are classified as (1) final examinations at the end of each quarter and (2) special examinations. Grades in all subjects are reported to the students' parents or guardians at the end of each quarter. Fees for special examinations are as follows: If taken at a regularly scheduled period, \$2.00; out of schedule, \$5.00. A student absent from an examination for any reason other than personal illness must obtain an excuse from the Council of Deans in order to take the examination. Examinations missed because of illness must be excused by the University Physician.

For detailed regulations governing special examinations, see "Rules and Regulations for Students" in *The Tiger Cub*, the student handbook.

**Announced Quizzes.** At least two announced one-hour quizzes shall be held in each subject during the quarter, one in the first half of the quarter and the other in the last half. Other quizzes may be given as deemed necessary by the instructor and department head.

**Mid-Quarter Deficiencies.** Deficiencies are reported at the end of the fifth week in each quarter.

### DEAN'S LIST

A full-time student (minimum of 15 quarter hours) passing all credit hours of work carried during a quarter and attaining a scholastic record within the upper five per cent of the records attained by the full-time students enrolled in his school may be designated an honor student for that quarter. The honor attained will be recorded on the Dean's List and on the student's permanent record.

## Academic Eligibility

**Continued Residence.** A student will be suspended for a period of 12 months at the end of any quarter during which he does not earn at least five credit hours. Moreover, a student will be suspended for a period of 12 months if he fails to meet the minimum percentage hours and grade point requirements as determined once each year. At the end of each Spring Quarter a student who has been enrolled at Auburn for a minimum of two quarters must have

earned from all work attempted at Auburn, credit hours and grade points equal at least to the following percentage schedules:

From 2 through 4 quarters of college residence at Auburn and elsewhere: 60 per cent.

From 5 through 7 quarters of college residence at Auburn and elsewhere: 70 per cent.

Beyond 7 quarters of college residence at Auburn and elsewhere: 80 per cent.

The post-baccalaureate student enrolled as an undergraduate remains in good standing if he meets the 80 per cent requirement on work taken at Auburn University since graduation; provided, however, that he may not be dropped until he has attempted 30 quarter hours of post-baccalaureate work at Auburn University.

A suspended student may reestablish eligibility to return in any succeeding quarter by attending Auburn the Summer Quarter immediately following the date of suspension and making a 1.0 (C) average on a quarterly load of not less than 15 quarter credits acceptable in his curriculum. A suspended student attempting but failing during a Summer Quarter to reestablish eligibility to continue cannot return before the expiration of his twelve-month suspension period. The effective beginning date of a student's twelve-month suspension period is the end of his last quarter in residence. A suspended student cannot reestablish eligibility or make progress toward an Auburn degree by earning credits elsewhere or via correspondence during his period of suspension.

Any work done at another institution by a student while on dropped status shall have no effect on his eligibility for continuation in residence, but a transcript of such work must be filed with the Registrar.

In determining a student's eligibility for continuation in residence, hours passed and grade points earned will be computed on the basis of credit courses carried, except that a student who passes a remedial course will not be dropped for failure to pass five hours.

Credit hours attempted, credit hours passed, and grade points earned in a Summer or other make-up quarter by a suspended student will be included in determining the eligibility for continuation in residence at the end of the first Spring Quarter after the student re-enters Auburn University. (This does not supersede the minimum five-hour regulation.)

Credit hours and grade points earned by correspondence or extension will not be included in calculations for continuation in residence.

It is the student's responsibility to know his continuation in residence status at all times. If in doubt about his standing, he should consult his dean.

When a regular student's load, by voluntary withdrawal from courses or because of excessive absences, has been reduced to less than 10 quarter hours, at the discretion of the dean he may be recommended for suspension for the remainder of the quarter or for the succeeding quarter.

The Council of Deans reserves the right to drop from the rolls any student at any time for flagrant or continuous neglect of his work or failure to make satisfactory grades.

Students enrolled in the School of Veterinary Medicine who make a scholastic average less than 1.25 for any two quarters of one academic year may be dropped from the School of Veterinary Medicine for scholastic deficiency.

A student who makes a grade of "F" on any course may be required to withdraw from the School of Veterinary Medicine until the beginning of the quarter in which that course is given during the next academic year, and he may be required to repeat certain other courses in the curriculum for that quarter.

Students who are dropped under the above provisions are eligible for admission to other curricula provided they meet the general scholastic requirements for continuance in college. The scholastic penalties incurred while enrolled in the School of Veterinary Medicine will become a part of the student's record.

## Degree Requirements

To qualify for graduation, a student must complete the courses and hours specifically required and accepted for his curriculum with a grade point average of 1.0 (C). A student who transfers from another institution must earn grade points equal in number to the additional hours required for completion of the curriculum. A student transferring from one curriculum to another requiring fewer hours will have his graduation requirements in the new curriculum increased in proportion to the number of quarters completed in the prior curriculum. If courses by correspondence and extension are accepted, the number of grade points allowed will not exceed the number of credit hours so completed.

Not more than 10 quarter hours of the final year's work may be obtained through extension or correspondence courses, or both, unless the student has completed a full load in residence previously for one full session of 36 weeks, in which case credit will be allowed for a total of 18 quarter hours in either extension or correspondence, or a combination of the two. All credit hours earned by correspondence or extension will be counted as any other credit hours earned toward meeting graduation requirements but will not be included in the calculation for continuation in residence.

Degrees are conferred at Commencement Exercises held at the close of each quarter. A degree will not be conferred in absentia without official permission of the student's dean.

The graduation fee of \$10.00 must be paid at the beginning of the quarter of graduation.

No student will be issued a diploma or statement of credits if he is in default on any payment due the University or any school or division thereof.

**Residence Requirement.** To obtain a bachelor's degree a student must complete the final year of work at Auburn University. This regulation may be waived, at the discretion of the dean, for men who entered military service from Auburn University and completed work while on active duty. A student must be enrolled in a curriculum at least nine months immediately prior to graduation.

**Second Degree.** A minimum of 45 quarter hours and 45 grade points and 36 weeks of residence is required for a second baccalaureate degree by a graduate of Auburn University. The minimum requirements for a second baccalaureate degree for a graduate of another institution are completion of the hours required in the final year of the curriculum with an equal number of grade points and 36 weeks of residence at this institution. A minimum of 45 quarter hours and 36 weeks of residence is required for a master's degree.

## GRADUATION HONORS

Students completing graduation requirements with exceptionally high scholastic records who have completed at least nine quarters of work in residence at Auburn University are graduated with distinction. The distinction attained will be recorded on the student's diploma and placed on his permanent record.

A transfer student who has completed at least nine quarters of work in residence at Auburn University is eligible for graduation honors if he meets both of the following requirements: (1) his grade point quotient on all work taken in residence at Auburn University meets the minimum requirements for the honor and (2) his over-all grade point quotient on all work taken in residence at Auburn University and elsewhere meets the minimum requirements for the honor.

A transfer student may not be graduated with a degree of distinction higher than that for which he would be eligible on the basis of his Auburn University record, and where his over-all average is lower than his Auburn University record, the degree of distinction earned will be determined by his over-all grade point quotient.

A student whose record at Auburn University fails to meet the requirements established for one of the degrees of distinction may not be graduated with honors regardless of his record elsewhere.

In determining graduation honors, all work attempted in residence except remedial subjects will be used in the calculations. Where transfer credits are considered, calculations will be based on the grade point values in use at Auburn University.

The grades of distinction and requirements are: With Honor, a grade point quotient of at least 2.4; With High Honor, a grade point quotient of at least 2.6; and With Highest Honor, a grade point quotient of at least 2.8.

## *Special Regulations*

For complete information regarding all Special Regulations, see "Rules and Regulations for Students" in the Tiger Cub, the student handbook.

## AUTOMOBILE REGISTRATION

Registration of four-wheel motor vehicles will be a part of the academic registration procedure at the beginning of the Fall Quarter each year for all undergraduate and graduate students and will be part of the registration procedure at the beginning of the Winter, Spring and Summer Quarters for all students not already registered. Students who bring unregistered cars on the campus after any registration period must register them at the University Security Office, Department of Buildings and Grounds, immediately after arrival on the campus. Faculty and Staff members shall register their four-wheel vehicles at the University Security Office. Failure to register a four-wheel vehicle, to use the proper decal and to park in the proper zone will constitute a violation and subject the violator to certain penalties.

Freshmen will not be permitted to park or operate a vehicle on the main campus during normal school hours. Freshmen should not bring cars to Auburn unless required for commuting. For specific information regarding designated parking areas, traffic regulations and controls, violations and penalties,

secure a copy of the "Parking and Traffic Regulations" from the University Security Office.

### DISCIPLINE

1. Government is administered by the President and the Council of Deans. Each student, by act of registration, obligates himself to obey all rules and regulations.

2. Students are expected to conduct themselves along the lines of good citizenship by obeying the laws of the United States, the State of Alabama, the City of Auburn, and the University. Enrollment as a student in no way exempts any person from penalty in case of violation of local, state, or national laws. (See Student Handbook for detailed regulations relative to discipline.)

3. Students are not permitted to participate in public entertainments or contests without previously obtaining permission of University authorities.

4. All publications supported by the Student Activities Fee are subject to supervision by the Board of Student Publications.



# School of Agriculture

E. V. SMITH, *Dean*

CHARLES F. SIMMONS, *Associate Dean*

COYT T. WILSON, *Assistant Dean*

THE SCHOOL OF AGRICULTURE offers courses designed to prepare both men and women for careers in the field of agriculture and related professions. The courses are so arranged as to provide a broad foundation in the basic sciences, a general knowledge of the applied sciences, and a reasonable number of cultural subjects. Most of the basic science courses are given in the freshman and sophomore years and serve as a basis for a better understanding of the applied or more practical subjects which are usually taken in the junior and senior years.

A curriculum is offered in Agricultural Science with majors in Agronomy and Soils, Animal Science, Dairy Production, Dairy Manufacturing, Poultry Science, Horticulture, and Agricultural Journalism. Other curricula are offered in Agricultural Administration, Agricultural Engineering, Biological Sciences, Forest Management, Ornamental Horticulture, and Wood Technology. Within these curricula majors are permitted in line with the student's special interest. If a student is permitted to major in a field where the courses are not prescribed in the catalog he should consult with the head of the department concerned.

The School of Agriculture also furnishes the subject matter training in Agriculture for the curriculum in Agricultural Education.

Transfer credit will not normally be allowed for any course passed with a grade lower than C at any other college or university.

Credit will not be allowed for agricultural subjects taken at non-land-grant colleges unless the student passes validating examinations in such subjects after entering Auburn. Arrangements for these examinations must be made with the Dean of Agriculture in the first quarter of the student's enrollment in the School of Agriculture at Auburn and the examinations must be completed before the middle of the second quarter.

## Curriculum in Agricultural Science (AG)

### FRESHMAN YEAR

#### FIRST QUARTER

#### SECOND QUARTER

#### THIRD QUARTER

CH 103 Gen. Chemistry .....4	EH 101 English Comp. ....5	EH 102 English Comp. ....5
CH 103L Gen. Chem. Lab. ...1	CH 104 Gen. Chemistry .....4	MH 112 Intr. College Math. 5
HY 107 United States History .....5	CH 104L Gen. Chem. Lab. ...1	ZY 102 Gen. Zoology .....5
MH 111 Intr. College Math. 5	ZY 101 Gen. Zoology .....5	MS Military Training ....1
AS 101 Agr. Orientation .....0	MS Military Training ....1	PE Physical Education ...1
MS Military Training ....1	PE Physical Education ...1	
PE Physical Education ...1		

### SOPHOMORE YEAR

AH 200 Intr. An. Husb. ....5	AS 202 Agr. Economics ....5	AH 204 Animal Biochemistry and Nutrition .....5
BY 101 General Botany ....5	BY 102 General Botany ....5	AY 201 Grain Crops .....5
PS 204 Physics .....5	CH 105 Gen. Chemistry .....3	HF 201 Orchard Mgt. ....5
MS Military Training ....1	CH 105L Gen. Chem. Lab. ...2	MS Military Training ....1
PE Physical Education ...1	MS Military Training ....1	PE Physical Education ...1
	PE Physical Education ...1	

## JUNIOR YEAR

FIRST QUARTER	
AN 301	Drainage & Ter. ....5
PH 301	General Poultry ....5
SP 305	Public Speaking ....3
JM 315	Agr. Journalism ....3
	Elective .....3

SECOND QUARTER	
AY 304	General Soils .....5
BY 308	Plant Physiology .....5
DH 200	Fund. of Dairying ..5
	Elective .....3

THIRD QUARTER	
AN 303	Farm Machinery and Equipment .....5
BY 309	Plant Pathology .....5
HF 308	Vegetable Gard. ....5
	Elective .....3

## SENIOR YEAR

AY 404	Cotton Production ..5
FY 313	Farm Forestry .....5
	Elective .....5
	Elective .....3

AS 301	Agr. Marketing .....5
AY 401	Forage Crops .....5
	Elective .....5
	Elective .....3

AH 401	Swine Production ....5
AS 401	Farm Management ..5
ZY 402	Economic Ento. ....5
	Elective .....3

Total—211 quarter hours

## Major in Agronomy and Soils

## FRESHMAN YEAR

(Same as in Agricultural Science except Botany 101 will be substituted for Zoology 102)

## SOPHOMORE YEAR

FIRST QUARTER	
AY 201	Grain Crops .....5
BY 102	General Botany .....5
CH 203	Organic Chemistry ..5
MS	Military Training ....1
PE	Physical Education ..1

SECOND QUARTER	
AH 204	Animal Biochemistry and Nutrition .....5
CH 105	General Chemistry ..3
CH 105L	Gen. Chem. Lab. ....2
PS 204	Physics .....5
MS	Military Training ....1
PE	Physical Education ..1

THIRD QUARTER	
AH 200	Introductory Animal Husbandry .....5
AY 304	General Soils .....5
DH 200	Fund. of Dairying ..5
MS	Military Training ....1
PE	Physical Education ..1

## JUNIOR YEAR

AS 202	Agr. Economics .....5
AN 301	Drainage & Terracing .....5
BY 306	Fundamentals of Plant Physiology .....5
	Elective .....3

AY 406	Com. Fertilizers .....3
HF 308	Vegetable Gard. ....5
PH 301	General Poultry .....5
SP 305	Public Speaking .....3
	Elective .....3

AN 303	Farm Mach. & Equipment .....5
AY 306	Soil Morphology & Survey .....3
JM 315	Agr. Journalism ....3
	Electives .....8

## SENIOR YEAR

AS 401	Farm Management ..5
AY 404	Cotton Production ..5
FY 313	Farm Forestry .....5
	Elective .....3

AY 401	Forage Crops .....5
BY 309	Plant Pathology .....5
	Electives .....8

AY 402	Soil Fertility .....5
ZY 402	Econ. Entomology ..5
ZY 300	Genetics .....5
	Elective .....3

Total—212 quarter hours

## RECOMMENDED ELECTIVES

AH 401	Swine Production .....5
AH 402	Beef Cattle Production .....5
AY 403	Grazing Systems in Alabama .....5
AY 405	Turf and its Management .....3
AY 409	Seed Production .....3
AY 410	Methods of Plant Breeding .....3
AY 453	Geomorphology .....5

AY 454	Soils Genesis and Classification .....5
AY 455	Soil Physics .....5
BY 401	Experimental Statistics for Biological Sciences .....5
BY 413	General Plant Ecology .....5
BY 415	Developmental Plant Anatomy .....5
CH 206	Quantitative Analysis .....5

Students planning to major in Agronomy and Soils should contact the Head of the Department and be assigned an advisor. Electives will be selected in consultation with their advisor in line with their interests and needs. Students desiring further training may plan their course of study so as to be prepared for graduate work at this or other institutions.

## Major in Animal Science

## FRESHMAN YEAR

FIRST QUARTER	
AH 200	Intr. An. Husb. ....5
CH 103	Gen. Chemistry .....4
CH 103L	Gen. Chem. Lab. ....1
MH 111	Intr. College Math. ..5
AS 101	Agr. Orientation ....0
MS	Military Training ....1
PE	Physical Education ..1

SECOND QUARTER	
EH 101	English Comp. ....5
CH 104	Gen. Chemistry .....4
CH 104L	Gen. Chem. Lab. ....1
MH 112	Intr. College Math. ..5
MS	Military Training ....1
PE	Physical Education ..1

THIRD QUARTER	
CH 105	Gen. Chemistry .....3
CH 105L	Gen. Chem. Lab. ....2
EH 102	English Comp. ....5
ZY 101	Gen. Zoology .....5
MS	Military Training ....1
PE	Physical Education ..1

## SOPHOMORE YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
CH 203	Organic Chem. or	BY 101	Gen. Botany .....5	AH 204	Animal Biochem-
CH 207	Organic Chemistry 5	JM 315	Agri. Journalism .....3		istry & Nutrition .....5
HY 206	United States Govt. 5	SP 305	Public Speaking .....3	AS 202	Agr. Economics .....5
ZY 102	Gen. Zoology .....5	VM 200	Gen. Microbiology 5	AY 304	General Soils .....5
MS	Military Training ....1	MS	Military Training ....1	MS	Military Training ....1
PE	Physical Education ...1	PE	Physical Education ...1	PE	Physical Education ...1
JUNIOR YEAR					
ZY 300	Genetics .....5	AH 403	Animal Breeding .....5	VM 422	Animal Diseases .....5
	Electives .....13	VM 421	Animal Physiology ...5	ZY 402	Economic Ento. ....5
			Electives .....8		Electives .....8
SENIOR YEAR					
	Electives .....18	AH 411	Seminar .....1		Electives .....18
			Electives .....18		

## Total—212 quarter hours

Students desiring to major in Animal Science will be assigned an advisor. A major may elect either a Terminal Degree Option or a Graduate Preparatory Option and will during his sophomore year with the assistance and approval of his advisor, develop a plan of study for the junior and senior years from lists of approved elective courses. As approved by the Dean of Agriculture and the student's advisor, substitutions may be permitted to meet specific needs of individual students.

## Major in Dairy Manufacturing

## FRESHMAN YEAR

(Same as in Agricultural Science)

## SOPHOMORE YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
BY 101	General Botany .....5	CH 105	General Chemistry 3	AS 202	Agr. Economics .....5
DH 200	Fund. of Dairying ..5	CH 105L	Gen. Chem. Lab. ..2	CH 203	Organic Chem. or
PS 204	Physics or	EC 213	Engineering Acctg.	CH 207	Organic Chem. ....5
PS 205	Intr. Physics .....5	& Cost Control .....5		EC 214	Engineering Acctg.
LY 101	Use of the Library ...1	JM 315	Agri. Journalism .....3	& Cost Control .....5	
MS	Military Training ....1	SP 305	Public Speaking .....3	MS	Military Training ....1
PE	Physical Education ...1	MS	Military Training ....1	PE	Physical Education ...1
		PE	Physical Education ...1		
JUNIOR YEAR					
AH 204	Animal Biochemistry and Nutrition .....5	DH 308	Dairy Bacteriology ..5	EH 345	Business and Pro- fessional Writing .....5
DH 305	Prac. Dairy Tests ...5	DH 311	Judging Dairy Prod. 1	DH 310	Technical Control
VM 200	Gen. Microbiology ...5	Electives .....13		of Dairy Products ...5	
Elective	.....3			DH 312	Judging Dairy Prod. 1
				Electives .....8	
SENIOR YEAR					
DH 408	Dairy Plant Procedures .....5	DH 409	Dairy Plant Procedures .....5	DH 410	Dairy Plant Procedures .....5
DH 313	Judging Dairy Products .....1	AN 406	Dairy Engineering ...3	Electives .....13	
Electives	.....13	DH 411	Food Plant Sanitation .....3		
			Electives .....8		

## Total—216 quarter hours

Of the 58 elective credits, at least 35 credits must be chosen from one of the categories listed below:

I. GENERAL AGRICULTURE	II. ECONOMICS	III. BASIC SCIENCE*
AH 200	EC 331	BY 401
Intr. An. Husb. ....5	Principles of Mktg. ...5	Exp. Statistics for
AS 401	EC 333	Biological Sciences ...5
Farm Management ...5	Salesmanship .....5	
AS 301	EC 341	CH 206
Agricultural Mktg. ...5	Business Law .....5	Quant. Analysis .....5
AY 201	EC 345	CH 208
Grain Crops .....5	Statistics .....5	Organic Chemistry ...5
AY 304	EC 404	CH 316
General Soils .....5	Office Management 5	Physical Chemistry ...5
AY 401	EC 432	CH 418
Forage Crops .....5	Advertising .....5	Biochemistry .....5
DH 314-315-316	EC 442	CH 419
Dairy	Personnel Mgt. ....5	Biochemistry .....5
Cattle Judging .....3	EC 463	CH 420
DH 317	Corp. Finance .....5	Biochemistry .....5
Dairy Cattle Feed-	IM 306	PS 206
ing & Management ...5	Industrial Mgt. ....5	Intr. Physics .....5
DH 403		FL 151-152
Dairy Farm Prac. ...5		German or
PH 301		FL 121-122
General Poultry .....5		French .....10

\* Courses recommended for students planning to take graduate work.

All students majoring in dairy manufacturing shall have had at least one summer practical dairy plant experience before graduation.

**Major in Dairy Production****FRESHMAN YEAR**

(Same as in Agricultural Science)

**SOPHOMORE YEAR****FIRST QUARTER**

CH 105	General Chemistry	3
CH 105L	Gen. Chem. Lab.	2
DH 200	Fund. of Dairying	5
PS 204	Physics	5
LY 101	Use of the Library	1
MS	Military Training	1
PE	Physical Education	1

**SECOND QUARTER**

AS 202	Agr. Economics	5
BY 101	General Botany	5
CH 203	or 207 Organic Chemistry*	5
MS	Military Training	1
PE	Physical Education	1

**THIRD QUARTER**

AH 204	Animal Biochemistry and Nutrition	5
AN 301	Drainage & Terracing	5
AY 201	Grain Crops	5
MS	Military Training	1
PE	Physical Education	1

**JUNIOR YEAR**

AY 304	General Soils	5
VM 200	Gen. Microbiology	5
SP 305	Public Speaking	3
	Elective	5

AY 401	Forage Crops	5
DH 308	Dairy Bacteriology	5
VM 421	Animal Physiology	5
DH 314	Judging Dairy Cattle	1
JM 315	Agr. Journalism	3

EH 345	Bus. & Prof. Writing	5
VM 422	Animal Disease Control	5
ZY 300	Genetics	5
DH 315	Judging Dairy Cattle	1
	Elective	3

**SENIOR YEAR**

AN 303	Farm Machinery & Equipment	5
DH 408	Dairy Plant Proc.	5
DH 317	Dairy Cattle Feeding & Mgt.	5
DH 316	Judging Dairy Cattle	1
	Elective	3

AH 403	Animal Breeding	5
PH 301	General Poultry	5
DH 402	Artificial Insemination	3
	Elective**	5

AS 401	Farm Management	5
DH 403	Dairy Farm Prac.	5
ZY 402	Econ. Entomology	5
	Elective	3

**Total—214 quarter hours**

\* If graduate study is planned, CH 207 is recommended, with CH 208 also to be taken as an elective.

\*\* If graduate study is planned, CH 206 Quantitative Analysis should be taken.

**Major in Horticulture****FRESHMAN YEAR**

(Same as in Agricultural Science except Botany 101 will be substituted for Zoology 102)

**SOPHOMORE YEAR****FIRST QUARTER**

BY 102	General Botany	5
HF 201	Orchard Mgt.	5
PS 204	Physics	5
MS	Military Training	1
PE	Physical Education	1

**SECOND QUARTER**

AS 202	Agr. Economics	5
CH 105	General Chemistry	3
CH 105L	Gen. Chem. Lab.	2
HF 224	Plant Propagation	5
MS	Military Training	1
PE	Physical Education	1

**THIRD QUARTER**

AH 204	Animal Biochemistry and Nutrition	5
AN 303	Farm Machinery	5
HF 221	Landscape Gardening	5
MS	Military Training	1
PE	Physical Education	1

**JUNIOR YEAR**

AY 304	General Soils	5
PH 301	General Poultry	5
SP 305	Public Speaking	3
JM 315	Agr. Journalism	3
	Elective	3

AS 301	Agr. Marketing	5
BY 306	Plant Physiology	5
HF 308	Vegetable Gardening	5
	Elective	3

AN 301	Drainage & Ter.	5
AY 402	Soil Fertility	5
HF 407	Preparation and Handling of Fruits and Vegetables	5
	Elective	3

**SENIOR YEAR**

HF 401	Truck Crops	5
HF 323	Floriculture or	
HF 406	Nut Culture	5
	Electives	8

BY 309	Plant Pathology	5
HF 404	Fruit Growing	5
	Electives	8

HF 405	Small Fruits	5
ZY 402	Economic Ento.	5
	Electives	8

**Total—211 quarter hours****APPROVED ELECTIVES**

AH 200	Introductory Animal Husbandry	5
AS 401	Farm Management	5
AS 303	Agricultural Cooperatives	3
AY 201	Grain Crops	5
AY 401	Forage Crops	5
AY 406	Commercial Fertilizers	3
CH 203	Organic Chemistry	5
CH 206	Quantitative Analysis	5
CH 342	Geology	3
DH 200	Fundamentals of Dairying	5
EC 333	Salesmanship	5
FY 313	Farm Forestry	5
HF 225	Flower Arranging	3
HF 402	Plant Breeding	5
HF 421	Arboriculture	5
HF 423	Nursery Management	5
PG 310	Reading Improvement	3
SA 113	Personal Typewriting	3
ZY 300	Genetics	5
ZY 406	Bee Culture	3

## Major in Poultry Science

## FRESHMAN YEAR

(Same as in Agricultural Science)

## SOPHOMORE YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
AS 202	Agri. Economics .....5	EC 212	Intr. Accounting .....5	AH 204	Animal Biochemistry and Nutrition .....5
BY 101	General Botany .....5	PH 301	General Poultry .....5	EC 103	Economic Geog. ....5
EC 211	Intr. Accounting .....5	PS 204	Physics .....5	ZY 300	Genetics .....5
MS	Military Training .....1	MS	Military Training .....1	MS	Military Training .....1
PE	Physical Education .....1	PE	Physical Education .....1	PE	Physical Education .....1

## JUNIOR YEAR

EC 341	Business Law .....5	AS 301	Agr. Marketing .....5	AS 361	Rural Sociology .....5
JM 315	Agri. Journalism .....3	SY 201	Intr. to Sociology .....5	EH 345	Bus. & Prof. ....5
SP 231	Public Speaking .....3	VM 311	Gen. Bacteriology .....5		Writing .....5
	Elective .....6		Elective .....3	PG 211	Gen. Psychology .....5
					Elective .....3

## SENIOR YEAR

EC 333	Salesmanship .....5	PH 404	Poultry Mgt. ....5	AN 307	Farm Wiring & Motors .....3
PH 302	Poultry Meat Prod. ....3	PH 408	Poultry Diseases .....5	AS 401	Farm Management .....5
PH 405	Poultry Feeding .....3	AS 304	Agr. Finance .....3	PH 410	Poultry Breeding .....3
ZY 411	Gen. Parasitology or .....5	AN 306	Farm Bldg. Const. ....3	PH 411	Poultry Marketing .....3
ZY 402	Economic Ento. ....5		Elective .....3		Elective .....3
	Elective .....3				

Total—212 quarter hours

Electives to be approved by departmental representatives.

## Agricultural Administration

The course in Agricultural Administration is designed both for those students who plan a career in businesses closely related to agriculture, and for those interested in the economics of agricultural production and marketing and in public policies affecting agriculture. The curriculum is administered through a faculty advisory system wherein individual student programs of study are developed in accordance with individual student needs and interests. The need for broad training, rather than narrow specialization, is emphasized.

The curriculum not only combines both business and technical agricultural courses, but through selection of electives it provides an opportunity for students to emphasize training in agribusiness, in Agricultural Economics, or in selected production fields. The curriculum leads to a degree of Bachelor of Science in Agricultural Administration.

The demand for graduates who have both business and applied agricultural training is increasing. In both public and private agencies, increasing attention to rural economic and social problems points to enlarged opportunities for qualified workers in teaching, research, sales, public relations, services, administration, and private employment in these fields. By properly selecting electives, students may prepare themselves to become (1) owners or managers of firms that produce, process, or market agricultural products; (2) teachers, research workers, or educational workers in the field; (3) public servants in the capacity of farm management or marketing specialists, commodity analysts, market news reporters, inspectors, credit analysts, etc.; or (4) employees of business firms that handle agricultural products or that service agricultural production and marketing firms.

## Curriculum in Agricultural Administration (AM)

## FRESHMAN YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
EH 101	English Comp. ....5	EH 102	English Comp. ....5	BY 101	Gen. Botany .....5
MH 111	Intr. College Math. 5	CH 103	Gen. Chemistry ....4	CH 104	Gen. Chemistry ....4
ZY 101	Gen. Zoology .....5	CH 103L	Gen. Chem. Lab. .1	CH 104L	Gen. Chem. Lab. .1
AS 101	Agr. Orientation ....0	MH 112	Intr. College Math. 5	HY 107	United States History .....5
MS	Military Training ....1	AS 102	Agr. Economics Orientation .....0	LY 101	Use of Library .....1
PE	Physical Education .1	MS	Military Training ....1	MS	Military Training ....1
		PE	Physical Education .1	PE	Physical Education .1

## SOPHOMORE YEAR

AH 204	Animal Biochemistry and Nutrition .....5	EC 212	Intr. Accounting ....5	EC 341	Business Law .....5
AS 202	Agr. Economics ....5	DH 200	Fund. of Dairying .5	HY 206	United States Govt. 5
EC 211	Intr. Accounting ....5	PS 204	Physics .....5	PH 301	General Poultry ....5
MS	Military Training ....1	MS	Military Training ....1	MS	Military Training ....1
PE	Physical Education .1	PE	Physical Education .1	PE	Physical Education .1

## JUNIOR YEAR

AH 303	Livestock Prod. ....5	AS 301	Agr. Marketing ....5	AN 303	Farm Mach. & Eqp. 5
AY 307	General Soils .....5	AS 361	Rural Sociology ....5	EC 245	Statistics .....5
EC 360	Money & Banking .5	SP 305	Public Speaking ....3	EH 345	Bus. & Prof. Writ. .5
	Elective .....3		Electives .....6		Elective .....3

## SENIOR YEAR

AS 410	Agr. Bus. Mgt. ....3	AS 403	Agr. Prices .....3	AS 401	Farm Management .5
EC 446	Business Cycles ....5	AY 401	Forage Crops .....5	AS 405	Agr. Policy .....3
	Electives .....10	FY 313	Farm Forestry .....5		Electives .....10
		AS 490	Senior Seminar .....1		
			Elective .....4		

Total—212 quarter hours

## RECOMMENDED ELECTIVES

GROUP 1		GROUP 2		GROUP 3	
AH 302	Feeds & Feeding ....3	AS 303	Agri. Cooperatives .3	AS 441	Hist. & Phil. of Extension .....3
AH 401	Swine Production ....5	AS 302	Farm Records .....3	AS 462	Rural Communities Around the World .3
AH 402	Beef Cattle Prod. ....5	AS 304	Agri. Finance .....3	PA 301	Philosophy .....3
AN 301	Drainage & Ter. ....5	AS 305	Farm Appraisal ....3	PA 302	Ethics .....3
AN 305	Farm Trac. & Eng. 5	AS 411	Econ. Dev. of Rural Resources .3	PA 308	Intr. Logic .....3
AY 201	Grain Crops .....5	EC 333	Salesmanship .....5		or
AY 404	Cotton Production .5	EC 432	Advertising .....5	PA 307	Scientific Res'n'g ....5
AY 406	Commercial Fert. ....3	EC 451	Intr. Ec. Theory ....5	PG 211	Gen. Psychology ....5
HF 401	Truck Crops .....5	EC 463	Corp. Finance .....5	PG 330	Social Psychology ....5
HF 404	Fruit Growing .....5	EC 464	Investments .....5	PG 360	Applied Psychology 5
ZY 300	Genetics .....5	EC 465	Public Finance .....5	SY 201	Gen. Sociology .....5
		EC 474	Adv. Statistics .....5	SY 311	Tech. & Soc. Chg. .3

Students desiring to major in Agricultural Administration should contact the Head of the Department of Agricultural Economics as early in their college careers as possible in order that they may be assigned to a faculty advisor. Electives will be selected in consultation with faculty advisors based on student needs and interests.

## Agricultural Engineering

This is a technical field designed to train engineers in the agricultural areas. The curriculum includes courses basic to all types of engineering, courses with particular emphasis on engineering problems in agriculture, and general agricultural courses. The curriculum leads to a degree of Bachelor of Science in Agricultural Engineering. Students completing the curriculum have opportunities in many types of work where both engineering and agricultural knowledge are required.

The Agricultural Engineering curriculum is accredited by the Engineers' Council for Professional Development.



## Curriculum in Agricultural Engineering (AN)

## FRESHMAN YEAR

## FIRST QUARTER

ZY 101	Gen. Zoology	.....5
EH 101	English Comp.	.....5
*MH 111	Intr. College Math.	.....5
EG 102	Engr. Drawing I	.....2
AS 101	Agr. Orientation	.....0
MS	Military Training	.....1
PE	Physical Education	.....1

## SECOND QUARTER

CH 103	General Chemistry	.....4
CH 103L	Gen. Chem. Lab.	.....1
EH 102	English Comp.	.....5
MH 112	Intr. College Math.	.....5
EG 104	Des. Geometry	.....2
AN 101	Intr. Agr. Engr.	.....0
MS	Military Training	.....1
PE	Physical Education	.....1

## THIRD QUARTER

EH 108	Classical Lit.	.....5
CH 104	General Chemistry	.....4
CH 104L	Gen. Chem. Lab.	.....1
MH 161	Anal. Geo. & Cal.	.....5
EG 105	Engr. Drawing II	.....2
AN 102	Intr. Agr. Engr.	.....0
MS	Military Training	.....1
PE	Physical Education	.....1
	Humanistic or Social Elective	.....1

## SOPHOMORE YEAR

AN 201	Soil & Implement Mechanics	.....5
MH 262	Anal. Geo. & Cal.	.....5
PS 201	Gen. Physics, Mechanics	.....5
CE 210	Engr. Surveying	.....3
MS	Military Training	.....1
PE	Physical Education	.....1

EC 200	Gen. Economics or Agr. Economics	.....5
ME 202	Engr. Materials Science Structure	.....3
MH 263	Anal. Geo. & Cal.	.....5
PS 202	Gen. Physics, Heat, Sound & Light	.....5
MS	Military Training	.....1
PE	Physical Education	.....1

ME 205	Applied Mechanics	.....4
MH 264	Anal. Geo. & Cal.	.....5
PS 203	Gen. Physics, Elec. & Magnetism	.....5
EG 204	Kinematics of Machines	.....3
MS	Military Training	.....1
PE	Physical Education	.....1

## JUNIOR YEAR

HY 107	United States History	.....5
EE 263	Circuit Analysis I	.....5
ME 306	Strength of Mat. I	.....4
MH 361	Diff. Equations	.....5

AN 302	Farm Structures	.....5
BY 101	Gen. Botany	.....5
ME 310	Thermodynamics	.....4
EG 205	Applied Graphic Statics	.....2
EH 304	Technical Writing	.....3

AN 304	Farm Elec. Design	.....5
AY 307	General Soils	.....5
ME 439	Machine Design I	.....4
ME 434	Fluid Mech. and Heat Transfer	.....4

## SENIOR YEAR

AN 403	Soil & Water Engr.	.....5
AN 407	Agr. Machinery Design Analysis	.....3
CE 406	Hydraulics Lab.	.....1
	Humanistic or Social Electives	.....6
	Agr. Elective	.....5

AN 401	Mechanics of Tractor Power	.....5
AN 404	Agr. Process Engr.	.....5
	Agr. Elective	.....5
	Humanistic or Social Elective	.....5

AN 405	Supplemental Irrigation	.....5
AN 408	Agr. Tractor Design Analysis	.....3
SP 305	Public Speaking	.....3
	Agr. Elective	.....5
	Humanistic or Social Elective	.....3

Total—232 quarter hours

## ELECTIVES

Courses used for electives must be selected from the list of humanistic-social electives below, subject to approval of the Department Head.

Six hours of Advanced ROTC may be substituted for SP 305 Public Speaking and EH 304 Technical Writing.

Requirements for agricultural electives may be met by taking fifteen hours from the following: AY 455 Soil Physics, BY 401 Experimental Statistics for Biological Sciences, BY 306 Fundamentals of Plant Physiology, AS 401 Farm Management, ZY 402 Economic Entomology, AY 402 Soil Fertility, AH 204 Animal Biochemistry and Nutrition.

## APPROVED HUMANISTIC-SOCIAL ELECTIVES

## HISTORY AND GOVERNMENT

HY 204	Hist. of the Modern World	.....3
HY 206	United States Government	.....5
HY 207	or 208 World History	.....5
HY 314	United States Colonial History	.....3
HY 315	International Organization	.....3
HY 322	The U.S. in World Affairs	.....3
HY 371	History of the West	.....3
HY 407	Political Science	.....5
HY 460	Great Leaders of History	.....5
HY 482	History of the South	.....5
HY	Current Events	.....1

## LITERATURE

EH 208	Literature of the Western World	.....3
EH 320	An Introduction to Drama	.....3

EH 350	Shakespeare's Greatest Plays	.....3
EH 355	Masterpieces of World Literature	.....3
EH 365	Southern Literature	.....3
EH 381	The Literature of the Age of Reason	.....3
EH 385	The Impact of Science and Technology upon Modern Literature	.....3
SP 334	Great American Speeches	.....3

## THE ARTS

AT 332	American Painting and Sculpture	.....3
AT 431	Contemporary Art	.....3
AR 360	Appreciation of Architecture	.....3
DR 313	Drama Appreciation I	.....3
DR 314	Drama Appreciation II	.....3
MU 373	Appreciation of Music	.....3
MU 374	Masterpieces of Music	.....3

**ECONOMICS**

EC 206 Socio-Economic Foundations of Contemporary America	3
EC 301 Geo-Political Basis of World Powers	3
EC 405 Cultural Geography of the World	5
EC 407 World Resources & Their Utilization	5

**SOCIOLOGY**

SY 201 Introduction to Sociology	5
SY 204 Social Behavior	5
SY 307 The Court and Penal Administration	3
SY 311 Technology and Social Change	3
SY 403 Regional Sociology	5

**PHILOSOPHY AND RELIGION**

PA 301 Introduction to Philosophy	3
PA 302 Introduction to Ethics	3
PA 330 Philosophy of Religion	5
PA 307 Scientific Reasoning	5
PA 308 Introduction to Logic	3
PA 440 American Philosophy	5
RE 303 Christian Ethics	5
RE 305 Comparative Religions	3
RE 306 Studies of the Gospels	3

**PSYCHOLOGY**

PG 211 General Psychology	5
PG 311 Behavior of Man	3
PG 461 Industrial Psychology	5

**Curriculum in Ornamental Horticulture (OH)****FRESHMAN YEAR**

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
BY 101 General Botany	5	BY 102 General Botany	5	CH 103 Gen. Chemistry	4
EH 101 English Comp.	5	EH 102 English Comp.	5	CH 103L Gen. Chem. Lab.	1
MH 111 Intr. College Math.	5	HF 101 Intr. to Orna. Hort.	1	HF 221 Landscape Gard.	5
AS 101 Agr. Orientation	0	MH 112 Intr. College Math.	5	ZY 101 General Zoology	5
MS Military Training	1	MS Military Training	1	MS Military Training	1
PE Physical Education	1	PE Physical Education	1	PE Physical Education	1

**SOPHOMORE YEAR**

CH 104 General Chemistry	4	CH 105 General Chemistry	3	EC 200 Gen. Economics	5
CH 104L Gen. Chem. Lab.	1	CH 105L Gen. Chem. Lab.	2	HF 321 Plant Materials	5
HF 222 Plant Materials	5	HF 223 Plant Materials	5	JM 315 Agr. Journalism	3
HY 107 United States History	5	HF 224 Plant Propagation	5	SP 305 Public Speaking	3
MS Military Training	1	MS Military Training	1	MS Military Training	1
PE Physical Education	1	PE Physical Education	1	PE Physical Education	1

**JUNIOR YEAR**

BY 306 Fundamentals of Plant Physiology	5	AY 304 General Soils	5	EC 211 Intr. Accounting	5
HF 323 Floriculture	5	BY 309 Plant Pathology	5	HF 322 Garden Mgt.	5
ZY 300 Genetics*	5	Tech. Elective	5	Tech. Elective	5
Elective	3	Elective	3	Elective	3

**SENIOR YEAR**

HF 424 Plant Composition	5	HF 426 Minor Problems	5	AY 402 Soil Fertility	5
HF 429 Adv. Plant Prop.	5	Tech. Electives	10	ZY 402 Economic Ento.	5
Tech. Elective	5	Elective	3	Tech. Elective	5
Elective	3			Elective	3

\* ZY 430 Principles of Heredity may be substituted for ZY 300.

Candidates for the degree of Bachelor of Science in Ornamental Horticulture are required to have three months, or an equivalent of three months, practical experience in a greenhouse, nursery, landscape sales lot, or flower shop.

**Total—212 quarter hours**

**TECHNICAL ELECTIVES:** Floriculture Field—HF 324 Floriculture, HF 421 Arboriculture, HF 422 Floriculture, HF 423 Nursery Management, HF 425 Flower Shop, HF 427-8 Minor Problems, BY 406 Systematic Botany, AY 406 Commercial Fertilizers, EC 333 Salesmanship, EC 341 Business Law, EC 432 Advertising; Landscape Field—HF 325 Landscape Design I, HF 326 Landscape Design II, HF 327 Landscape Construction, HF 421 Arboriculture, HF 423 Nursery Management, HF 427-8 Minor Problems, BY 406 Systematic Botany, AN 403 Soil and Water Engineering, AY 406 Commercial Fertilizers, EC 212 Introductory Accounting, EC 333 Salesmanship, EC 341 Business Law, EC 432 Advertising, EC 433 Retail Store Management, EC 434 Purchasing, EC 442 Personnel Management, AT 113 Perspective, AT 317 Packaging; Nursery Field—HF 324 Floriculture, HF 421 Arboriculture, HF 422 Floriculture, HF 423 Nursery Management, HF 427-8 Minor Problems, BY 406 Systematic Botany, AY 406 Commercial Fertilizers, AN 403 Soil and Water Engineering, EC 333 Salesmanship, EC 341 Business Law, EC 432 Advertising; Flower Shop Field—HF 324 Floriculture, HF 422 Floriculture, HF 425 Flower Shop, HF 427-8 Minor Problems, AT 113 Perspective, AT 317 Packaging, EC 212 Introductory Accounting, EC 333 Salesmanship, EC 341 Business Law, EC 432 Advertising, EC 433 Retail Store Management, EC 434 Purchasing, EC 442 Personnel Management, BY 406 Systematic Botany.

### Forestry

Two curricula are offered in forestry, one in forest management and the other in wood technology. The former leads to the degree Bachelor of Science in Forestry while the other leads to the degree Bachelor of Science in Wood Technology. In addition to these curricula the Department offers an honors program in the area of forest management. This program leads to the degree Bachelor of Science in Forestry (Honors Program).

Training in forest management and administration prepares the student as a land manager. He acquires professional knowledge and skills relating to efficient production of wood as a raw material. He studies policies, techniques and procedures whereby land may be managed for related products and services including water, wildlife and recreation. There is a strong demand for foresters in private industry. Pulp companies, lumber and related industries hire the majority of graduates in the South. State and Federal agencies as well as consulting foresters employ a large number of graduates. The graduate may expect his initial assignments to include land line surveying, timber cruising, timber marking and land and timber purchasing. After experience is gained the graduate will assume more responsibility for land management plans and policies in his capacity as a land manager.

Wood technology is the science of making the most efficient use of the products of the tree. This includes the development of new products as well as more efficient production of standard products. The wood technologist must understand the physics and chemistry of wood as well as its anatomy and structure and must be familiar with various wood products and the methods for manufacturing them. The curriculum is sufficiently flexible that the student may specialize in chemistry, structural design, industrial management or in other fields of his choice by proper selection of his minors in these fields. The wood technologist finds employment with wood manufacturing industries and their suppliers as well as with private and public organizations which carry on research and product development for industry.

The Department of Forestry is accredited by the Society of American Foresters.

### Curriculum in Forest Management (FY)

#### FRESHMAN YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
BY 101	General Botany ...5	BY 102	General Botany ...5	CE 201	Surveying I .....5
FY 101	Intr. to Forestry ...5	CH 103	General Chemistry ...4	CH 104	General Chemistry ...4
FY 104	Forest Cartography ...2	CH 103L	Gen. Chem. Lab. ...1	CH 104L	Gen. Chem. Lab. ...1
FY 105	For. Convocation* ...0	MH 112	Intr. College Math. ...5	EH 101	English Comp. ....5
MH 111	Intr. College Math. ...5	LY 101	Use of Library ...1	MS	Military Training ...1
AS 101	Agri. Orientation ...0	MS	Military Training ...1	PE	Physical Education ...1
MS	Military Training ...1	PE	Physical Education ...1		
PE	Physical Education ...1				

#### SOPHOMORE YEAR

BY 306	Plant Physiology ...5	AY 305	General Soils ...5	FY 203	Silvics .....5
EH 102	English Comp. ....5	EH 304	Technical Writing ...3	FY 204	For. Mensuration ...5
FY 201	Dendrology .....3	FY 202	Dendrology .....3	FY 205	Wood Identification ...5
PS 205	Intr. Physics .....5	PS 206	Intr. Physics .....5	MS	Military Training ...1
MS	Military Training ...1	MS	Military Training ...1	PE	Physical Education ...1
PE	Physical Education ...1	PE	Physical Education ...1		

#### SUMMER CAMP

FY 390	Field Mensuration ...5
FY 391	Forest Engineering ...5
FY 392	Forest Ecology .....3
FY 393	Ala. Forest Indust. ...3
FY 395	Forest Site Evaluation .....2

\* This course will be taken in all except Summer Quarters.

## JUNIOR YEAR

## FIRST QUARTER

AS 202 Agr. Economics	5
EC 213 Engineering Acctg.	5
FY 301 Silviculture	5
Elective	3

## SECOND QUARTER

FY 302 Forest Fire Control	3
FY 309 Sampling	3
FY 316 Forest Economics	3
SP 305 Public Speaking*	3
ZY 101 General Zoology	5
Elective	3

## THIRD QUARTER

BY 310 Forest Pathology	5
FY 315 Seeding & Planting	3
FY 310 Adv. Mensuration	3
HY 206 United States Govt.	5
Elective	3

## SENIOR YEAR

FY 408 Logging	3	FY 407 Forest Mgt.	5	FY 402 Range & Game Mgt.	5
FY 414 Reg. Silviculture	3	FY 417 Photogrammetry	5	FY 418 Adv. Forest Mgt.	3
FY 427 Forest Valuation	5	FY 435 Forest Products	5	ZY 305 Forest Entomology	5
FY 434 Forest Policy	3	Merchandising	5	Electives	6
Elective	3	Elective	5		

Total—238 quarter hours

\* This course will not be required of students electing an Advanced ROTC program.

## ELECTIVES

Fifteen of the 23 elective hours included in the forest management curriculum must be selected from an approved list of humanistic-social electives. Furthermore, a minimum of one course must be selected from each of the following categories:

I. Literature and the Arts, II. Economics and History, and III. Other Social Sciences.\*\*\*

\*\*\* Nine hours of Advanced ROTC may be charged against the humanistic-social elective requirement. The remaining nine hours of Advanced ROTC may be chosen from free electives and the three credit hours normally required for SP 305 Public Speaking.

## Honors Program in Forestry

The Honors Program in Forestry has been developed to provide able students opportunity to explore in depth, areas in which they are interested, to prepare for graduate school, or to obtain a more rounded education. The program is flexible, permitting concentration of effort in areas of the student's choosing.

Students in the Forest Management Curriculum may apply for admission to the program following completion, with a cumulative grade point average of 1.75 or better, of the course work requirements through forestry summer camp. Permission for election rests with the Head and Executive Council of the Department of Forestry. Upon admission the student will be assigned to a faculty advisor who will guide him in the preparation of his program.

## JUNIOR YEAR

## FIRST QUARTER

AS 202 Agr. Economics	5
HY 206 U.S. Government	5
FY 301 Silviculture	5
Elective	3

## SECOND QUARTER

FY 309 Sampling	3
FY 316 Forest Economics	3
SP 305 Public Speaking*	3
Electives	10

## THIRD QUARTER

ZY 101 General Zoology	5
Electives	15

## SENIOR YEAR

FY 427 Forest Valuation	5	FY 407 Forest Management	5	FY 490 Seminar in Forestry	1
FY 434 Forest Policy	3	Electives	13	FY 421 Forest Research	
Electives	12			Methods**	3
				Electives	14

Total—238 quarter hours

In addition, one of the following courses must be selected: BY 310, Forest Pathology (5); FY 302, Forest Fire Control (3); or ZY 305, Forest Entomology (5).

\* This course will not be required for students electing an Advanced ROTC program.

\*\* Any 3 or 5 hour course in statistics may be substituted for FY 421.

The requirements relative to the humanistic-social electives are the same as with the standard forest management curriculum. Thirty of the remaining elective hours are to be chosen, under the supervision of the faculty advisor, so as to develop a distinct program leading to a predetermined goal. None of the thirty hours in the special program may be used for Advanced Military Science.

## Curriculum in Wood Technology (WT)

## FRESHMAN YEAR

## FIRST QUARTER

EH 101	English Comp.	.....5
CH 103	General Chemistry	..4
CH 103L	Gen. Chem. Lab.	..1
MH 111	Intr. College Math.	..5
FY 105	Forestry Convo.*	....0
AS 101	Agri. Orientation	....0
MS	Military Training	....1
PE	Physical Education	....1

## SECOND QUARTER

EH 102	English Comp.	.....5
CH 104	General Chemistry	..4
CH 104L	Gen. Chem. Lab.	..1
MH 112	Intr. College Math.	..5
FY 101	Intr. to Forestry	....3
MS	Military Training	....1
PE	Physical Education	....1

## THIRD QUARTER

BY 101	General Botany	.....5
CH 105	General Chemistry	..3
CH 105L	Gen. Chem. Lab.	..2
EG 102	Eng. Drawing	....2
MH 161	Anal. Geom. & Cal.	..5
MS	Military Training	....1
PE	Physical Education	....1

## SOPHOMORE YEAR

BY 102	General Botany	.....5
FY 201	Dendrology	.....3
PS 205	Intr. Physics	.....5
	Elective	.....5
MS	Military Training	....1
PE	Physical Education	....1

FY 202	Dendrology	.....3
FY 206	Wood Measurement**	.....3
PS 206	Intr. Physics	.....5
	Elective	.....5
MS	Military Training	....1
PE	Physical Education	....1

AS 202	Agr. Economics	.....5
EH 304	Technical Writing	....3
FY 205	Wood Identification	..5
MS	Military Training	....1
PE	Physical Education	....1

## JUNIOR YEAR

CH 203	Organic Chemistry	..5
EC 213	Eng. Acct. & Cost Control	.....5
FY 311	Wood Tech. I**	.....5
	Elective	.....5

FY 432	Seasoning & Pres.**	..5
SP 305	Public Speaking	.....3
ZY 101	General Zoology	.....5
	Elective	.....5

FY 433	Seasoning & Pres. Lab.**	.....2
HY 206	U.S. Government	.....5
	Electives	.....10

## SENIOR YEAR

FY 430	Wood Tech. II**	.....5
	Electives	.....15

FY 425	Wood Gluing & Lam.**	.....5
	Electives	.....13

FY 421	Forest Res. Methods***	.....3
FY 431	Wood Tech. III**	.....5
	Electives	.....6

Total—216 quarter hours

\* This course will be taken in all except Summer Quarters.

\*\* Alternate year offering.

\*\*\* Any 3 or 5 hour course in statistics may be substituted for FY 421.

Note: Sufficient latitude is allowed that the student may plan his elective work with his advisor to fulfill his personal objectives while in college. Two minors, however, will be required, one of which must be in mathematics, chemistry or engineering. Other suggested minors are: industrial management, economics, botany, foreign language, zoology, physics, English, business administration, education, and forest management. Each minor shall consist of a minimum of 30 quarter hours in a series of related subjects. Prior to registration for the second quarter of the junior year, the planned course content of the two minors must be approved by the department head. A student may always substitute a more intensive group of courses for one or more of the required courses, provided the same breadth of coverage is maintained.

As a part of the requirement for the degree with a major in wood technology, the student must complete a minimum of three weeks of supervised industrial tours of forest products industries. A satisfactory report on these tours must be submitted to the department head prior to graduation.

## Curriculum in Biological Sciences (BI)

## Major in Botany

## FRESHMAN YEAR

(Same as in Agricultural Science)

## SOPHOMORE YEAR

## FIRST QUARTER

BY 101	General Botany	.....5
CH 105	Gen. Chemistry	.....3
CH 105L	Gen. Chem. Lab.	..2
PS 205	Intr. Physics	.....5
MS	Military Training	....1
PE	Physical Education	....1

## SECOND QUARTER

CH 207	Organic Chem.	.....5
BY 102	General Botany	.....5
PS 206	Intr. Physics	.....5
MS	Military Training	....1
PE	Physical Education	....1

## THIRD QUARTER

AS 202	Agr. Economics	.....5
EH 253	Lit. in English	.....5
	Elective	.....5
MS	Military Training	....1
PE	Physical Education	....1

## JUNIOR YEAR

## FIRST QUARTER

EH 390	Adv. Composition	..5
VM 200	Gen. Microbiology	..5
	Electives	.....8

## SECOND QUARTER

AY 304	General Soils	.....5
BY 309	Gen. Plant Pathology	.....5
	Electives	.....8

## THIRD QUARTER

BY 306	Fund. Plant Physiology	.....5
ZY 304	Gen. Entomology	..5
	Electives	.....8

## SENIOR YEAR

BY 413	Gen. Pl. Ecology	..5
FL 121	Elem. French or	
FL 151	Elem. German	..5
ZY 300	Genetics	.....5
	Electives	.....3

BY 415	Plant Anatomy	.....5
FL 122	Elem. French or	
FL 152	Elem. German	..5
	Electives	.....8

BY 406	Systematic Botany	..5
	Electives	.....13

## Total—210 quarter hours

Of the 53 elective hours, 35 must be chosen from the following lists. Usually this would involve at least 10 hours from each of the three lists.

## BASIC SCIENCE

BY 310	Forest Pathology	.....5
BY 401	Exp. Statistics for Biological Sciences	..5
BY 410	Aquatic Plants	.....5
BY 416	Plant Microtechnique	.....5
BY 420	Weed Ident. and Control	.....5
BY 430	Nematode Diseases of Plants	.....3
CH 206	Quant. Analysis	.....5
CH 208	Organic Chemistry	..5
CH 418, 419, 420	Biochemistry	.....15
MH 161, 282, 283, 284	Analytic Geom. & Calculus	.....20
PS 217	Astronomy	.....3
ZY 401	Invertebrate Zoology	.....5
ZY 415	Limnology	.....5

## GENERAL AGRICULTURE

AH 204	Animal Biochemistry and Nutrition	.....5
AN 303	Farm Mach. and Equip.	.....5
AS 301	Agri. Marketing	.....5
AY 201	Grain Crops	.....5
AY 401	Forage Crops	.....5
AY 402	Soil Fertility	.....5
AY 404	Cotton Prod.	.....5
AY 405	Turf. & Its Mgt.	.....3
AY 406	Commercial Fertilizers	.....3
AY 409	Seed Prod.	.....3
FY 313	Farm Forestry	.....5
HF 201	Orchard Mgt.	.....5
HF 308	Vegetable Gardening	.....5
HF 421	Arboriculture	.....5

## HUMANISTIC &amp; SOCIAL SCIENCES

AT 105, 106, 107	Drawing	15
AT 227	Sculpture	.....5
AT 431	Contemporary Art	..3
DR 313	Drama Apprec. I	...3
DR 314	Drama Apprec. II	...3
EC 206	Socio-Eco. Found. of Contemp. Am.	..3
EC 103	Econ. Geography	.....5
EC 301	Geo-Political Basis of World Powers	..3
EC 405	Cultural Geography of the World	.....5
EH 241	Scien. Terminology	..5
EH 310	Word Study	.....3
EH 254	Lit. in English	.....5
EH 365	Southern Literature	..3
EH 385	The Impact of Sci. & Tech. upon Modern Literature	..3
HY 206	United States Govt.	..5
HY 322	The U.S. in World Affairs	.....3
HY 407	Political Science	.....5
MU 351	Music History I	...3
MU 352, 353	Music History II & III	.....6
PA 301	Intr. to Philosophy	..3
PA 302	Intr. to Ethics	.....3
PA 307	Scientific Reason.	.....5
PG 211	Gen. Psychology	.....5
RE 301	Religion and Modern Thought	.....3

Students desiring to major in Botany should contact the Head of the Department as soon as possible in their college careers, so that they may be assigned to advisors. Electives will be chosen to fit their interests and needs after consultation with their advisors.

## Majors in Zoological Sciences

Options: Entomology, Fisheries, Wildlife, Zoology

## FRESHMAN YEAR

## FIRST QUARTER

EH 101	English Comp.	.....5
MH 111	Intr. College Math.	..5
ZY 101	General Zoology	.....5
ZY 100	Zool. Orientation	..0
MS	Military Training	...1
PE	Physical Education	..1

## SECOND QUARTER

CH 103	General Chemistry	..4
CH 103L	Gen. Chem. Lab.	..1
MH 112	College Math.	.....5
ZY 102	General Zoology	.....5
AS 101	Agri. Orientation	..0
MS	Military Training	...1
PE	Physical Education	..1

## THIRD QUARTER

BY 101	General Botany	.....5
CH 104	General Chemistry	..4
CH 104L	Gen. Chem. Lab.	..1
EH 102	English Comp.	.....5
MS	Military Training	...1
PE	Physical Education	..1



## SOPHOMORE YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
BY 102	General Botany .....5	CH 207	Organic Chemistry or	CH 208	Organic Chemistry or
PS 205	Intr. Physics .....5	CH 203	Organic Chemistry* 5	AH 204	Animal Biochemistry
ZY 304	Gen. Entomology .....5	HY 107	United States Hist. 5		& Nutrition* .....5
MS	Military Training .....1	PS 206	Intr. Physics .....5	AS 202	Agri. Economics .....5
PE	Physical Education ..1	MS	Military Training .....1	ZY 300	Genetics .....5
		PE	Physical Education ..1	MS	Military Training .....1
				PE	Physical Education ..1

\* For students who will not attend graduate school.

## JUNIOR YEAR

Electives .....	18	ZY 301	Comp. Anatomy .....5	ZY 306	Principles of
			Electives .....		Animal Ecology ....3
					Electives .....

## SENIOR YEAR

ZY 411	Parasitology .....5	ZY 401	Invert. Zoology .....5	Electives .....	18
ZY 424	Animal Physiology ..5		Electives .....		
	Electives .....				

Total—211 quarter hours

## GROUP ELECTIVES—ZOOLOGY AND ENTOMOLOGY

Students in Zoology and/or Entomology must take a minimum of 40 hours from the group electives listed below, including EH 304, SP 305, ZY 308, ZY 421 or 422, and VM 200. Other electives are free, except that all electives must be approved by the faculty advisor.

AY 304	Soils .....	5	ZY 308	Micrology .....	5
AY 401	Forage Crops .....	5	ZY 402	Economic Entomology .....	5
BY 309	Plant Pathology .....	5	ZY 404	Medical Entomology .....	5
BY 401	Expt. Stat. for Biol. Students .....	5	ZY 405	Forest Insects .....	5
BY 406	Systematic Botany .....	5	ZY 406	Bee Culture .....	3
BY 413	Plant Ecology .....	5	ZY 407	Insect Morphology .....	5
EH 304	Technical Writing .....	3	ZY 409	Histology .....	5
FL 121-22	Elementary French .....	10	ZY 410	Systematic Entomology .....	5
FL 131-32	Elementary Spanish .....	10	ZY 421	Vertebrate Zoology I .....	5
FL 151-52	Elementary German .....	10	ZY 422	Vertebrate Zoology II .....	5
FY 313	Farm Forestry .....	5	ZY 435	Marine Biology .....	3
SP 305	Public Speaking .....	3	VM 200	General Microbiology .....	5
ZY 302	Vertebrate Embryology .....	5			

## GROUP ELECTIVES—FISHERIES AND WILDLIFE

Students in Fisheries and/or Wildlife must take a minimum of 40 hours from the group electives listed below, including EH 304, SP 305, ZY 421 or 422, ZY 426, and ZY 436. Other electives are free, except that all electives must be approved by the faculty advisor.

AY 304	Soils .....	5	FY 313	Farm Forestry .....	5
AY 401	Forage Crops .....	5	FY 434	Forest Policy .....	2
BY 401	Experimental Statistics for		SP 305	Public Speaking .....	3
	Biological Sciences .....	5	VM 200	General Microbiology .....	5
BY 406	Systematic Botany .....	5	ZY 207	Birds .....	3
BY 410	Aquatic Plants .....	5	ZY 414	Aquatic Insect Taxonomy .....	3
BY 413	Plant Ecology .....	5	ZY 415	Limnology .....	5
EH 304	Technical Writing .....	3	ZY 421	Vertebrate Zoology I .....	5
FL 121-22	Elementary French .....	10	ZY 422	Vertebrate Zoology II .....	5
FL 131-32	Elementary Spanish .....	10	ZY 426	Game Management .....	5
FL 151-52	Elementary German .....	10	ZY 428	Hatchery Management .....	3
FY 201	Dendrology .....	3	ZY 435	Marine Biology .....	3
FY 202	Dendrology .....	3	ZY 436	Management of Small Impoundments .....	3
FY 203	Silvics .....	5	ZY 437	Fisheries Biology .....	3
FY 301	Silviculture .....	5	ZY 438	Wildlife Techniques .....	3

# School of Air Science

COLONEL RALPH I. WILLIAMS  
*Commandant and Professor of Air Science*

THE AIR FORCE ROTC was instituted at Auburn University in the Fall of 1946 for the purpose of training AFROTC cadets who have the qualities and attributes essential to their progressive and continued development as officers in the reserve and regular Air Force.

The instruction is designed to provide the Air Force ROTC students with a knowledge and understanding of the characteristics and capabilities of aerospace; and the principal weapons, operational factors, and organizational units which the United States Air Force employs in accomplishing its missions.

The curriculum in Air Science is divided into two courses, basic and advanced. A description of these courses, requirements for entrance, etc., is outlined below.

## Basic Course

The Air Force course of study normally pursued by the student during his freshman and sophomore academic years is commonly referred to as the AFROTC Basic Course. One credit hour is allowed for each quarter of the two-year basic course successfully completed. Leadership Laboratory (drill) is scheduled each Tuesday and Thursday from 1:00 to 2:00 p.m.

In the freshman year classroom activity of three hours per week plus two hours of drill are required during one quarter. During the other two quarters the student will attend drill only (Leadership Laboratory). In the sophomore year, in addition to two hours of drill, classroom activity of two hours per week is required for all three quarters. Four quarters of classroom activity and six quarters of Leadership Laboratory (drill) must be successfully completed to satisfy the University's military requirement in the Basic ROTC course.

## Advanced Course

Advanced Air Force ROTC is a program designed to provide highly qualified junior officers for the United States Air Force. Enrollment in the Advanced Course is based upon such factors as leadership, qualification and desire for flying training, academic major, scholastic achievement, and physical qualifications. Successful completion of the Advanced Course qualifies the student for consideration of appointment as a Second Lieutenant in the USAF.

The Advanced Course consists of a six-quarter course, normally taken during the junior and senior years. Three credit hours are allowed for each quarter. For limitation on credit allowed toward meeting engineering degree requirements, see engineering curricula. Six hours of instruction are taken per week, four classroom periods and two leadership laboratory periods. Students are paid at the rate of 90 cents per day while enrolled in the Advanced Course.

An advanced student selected for enrollment in Category I-P (Pilot) will be given 36½ hours of actual flying and 35 hours of ground instruction, which may qualify him for a private flying certificate.

An AFROTC summer training period of four weeks duration must be attended by the student before he becomes eligible for a commission. Summer training is normally accomplished during the summer between the junior and senior years. Uniforms, quarters and rations are furnished by the government during the training period as well as travel expenses to and from camp. The requirements for the advanced course are:

1. United States Citizenship.
2. Be physically qualified in accordance with standards prescribed by the Department of the Air Force.
3. Be under 28 years of age at time of graduation and completion of the Advanced Course for an appointment as a Reserve of the Air Force in the grade of Second Lieutenant.
4. Students desiring to qualify for an Aeronautical rating in the USAF must not have reached 26½ years of age at time of graduation and completion of the Advanced Course for an appointment as a Reserve of the Air Force in the grade of Second Lieutenant, and accept an appointment to an Air Force Flight Training School (agree to make formal written application for flight training leading to a military aeronautical rating in the United States Air Force not less than 180 days before scheduled date of graduation).
5. Usually have at least two academic years to complete for graduation.
6. Have an overall scholastic average of 1.0 or higher.
7. Be selected by the Professor of Air Science and the President of the institution.
8. Execute a written agreement with the government to complete the two-year Advanced Course training and to attend one summer camp (four weeks) preferably at the end of the first year of the Advanced Course. Upon completion of the course of instruction therein to accept an appointment as a Reserve of the Air Force in the grade of Second Lieutenant, if tendered, and agree to serve on active duty as a commissioned officer with the United States Air Force, on being ordered thereto by proper authority, for not less than four consecutive years, in the case of Category II (Scientific and Engineering) and Category III (general) cadets and not less than five consecutive years, in the case of category I-P (Pilot) and Category I-N (Navigator), unless sooner relieved of this obligation. (Veterans are exempt from this active duty requirement.)
9. Have completed appropriate basic training (2 years Basic AFROTC) or have equivalent credit in lieu thereof, and have attained qualifying scores on Air Force Officer Qualifying Tests as prescribed by the Department of the Air Force.
10. Veterans who desire to enroll in the Advanced Course, may on the basis of previous honorable active U.S. military service, request a waiver of the Basic Course, or portion thereof, as a requirement for entrance. If a student meets all other requirements he will be enrolled at the beginning of his junior year.

### **Uniforms and Equipment**

Basic Student: Uniform commutation.

Advanced Students: Monetary allowance in lieu of uniforms.

All students are required to deposit the sum of \$30.00 with the Bursar of the University, prior to enrollment in the AFROTC. They are then furnished

a uniform in good condition and other necessary supplies through the AFROTC Supply Office. Upon completion of the AFROTC Course of Instruction, or upon withdrawal of the student therefrom, the uniform and other supplies are turned in and the deposit returned to the student.

Advanced Air Force students are furnished regulation officer uniforms. These uniforms are purchased by the University which is in turn reimbursed by the Government at a fixed rate. Upon graduation the regulation uniform becomes the property of the advanced student.

### **Distinguished AFROTC Graduates**

Distinguished AFROTC Graduates will be tendered commissions in the Regular Air Force which are the same as commissions received from the Air Force Academy. All other AFROTC graduates will be tendered reserve commissions.

The Professor of Air Science may designate as a Distinguished AFROTC Graduate a cadet who:

1. Possesses outstanding qualities of leadership and high moral character.
2. Demonstrates leadership ability through achievements while participating in recognized campus activities, both curricular and extra curricular.
3. Have a standing in their academic and military classes which, in conjunction with (1) and (2), above, warrants designation as "Distinguished," and consideration for an appointment in the Regular Air Force.

### **Universal Military Training and Service Act Deferments**

Students enrolled in the AFROTC program may be deferred under the provisions of the Universal Military Training and Service Act, as follows:

1. Students so deferred are required to sign an AFROTC deferment agreement. The undergraduate provisions of the agreement require the student to complete the basic course and to enroll in and complete the advanced course at the proper time, if accepted therefor; and upon completion of termination of the course of instruction therein, to accept a commission, if tendered.
2. This Department will notify the appropriate local Selective Service Board concerning students who have been selected for deferment. Students dropped from Air Force ROTC, failing to meet minimum scholastic requirements, or those not considered potential Advanced Course students will no longer be deferred.
3. Students who decline to fulfill the terms of their AFROTC deferment agreements pertaining to undergraduate work at the institution will be permanently suspended immediately.

# School of Architecture and The Arts

WILLIAM A. SPEER, *Dean*

THE SCHOOL OF ARCHITECTURE AND THE ARTS is composed of the Departments of Architecture, Art, Building Technology, Dramatic Arts and Music. Undergraduate degree courses are offered in Architecture, Interior Design, Visual Arts, Industrial Design, Building Construction, Dramatic Arts, and Music. Graduate degree courses are offered in Art and Building Construction. The departments of Dramatic Arts and Music offer sound basic training courses in these fields for students wishing to elect a minor or major concentration in them.

## Department of Architecture

The Department of Architecture was established in 1907 and is the oldest in the South. Courses are offered leading to the degrees Bachelor of Architecture, Bachelor of Interior Design and Bachelor of Industrial Design.

Admission to the curricula in Architecture and Interior Design is limited. New students are admitted directly from high school only in the Fall Quarter. Following approval for general admission to the University by the Admissions Officer, applications are reviewed for selection by the Committee on Admissions of the Department of Architecture. Students qualifying for advanced standing who have completed not less than one academic year of college work, with preparation in Mathematics and English equivalent to Mathematics 111-112-161 and English 101-2, may be admitted in the Summer Quarter. All applicants for admission to Architecture and Interior Design must present scores from at least one of the following testing programs: American College Testing Program (ACT), National Merit Scholarship Qualifying Test (NMQT), or the Scholastic Ability Test (PSAT and SAT) of the College Entrance Examination Board (CEEB). Applicants whose records indicate the need will be required to report for special testing and a personal conference with a member of the Committee.

Specific high school preparation in mathematics for students in Architecture is described under **Requirements in Mathematics** on page 74.

## Architecture

The curriculum in Architecture seeks to prepare the student to take his place as a citizen and as a professional among the practitioners of Alabama and the Southeastern region. Since the building industry is one of the three largest in the nation in terms of expenditure and employment, the architect today must accept a concern for the improvement of the physical environment and assume the leadership in evolving effective procedures toward this end. Therefore, in an era of broad technological advancement, the architect must bring to his work technical knowledge, social insight, creative imagination, and individual integrity.

The Department of Architecture is a member of the Association of Collegiate Schools of Architecture, and the curriculum in Architecture is accredited by the National Architectural Accrediting Board. Training at Auburn University prepares the student for the office experience and the examination required by the registration laws for the practice of architecture in Alabama as well as for examination by the National Council of Architectural Registration Boards.

### Curriculum in Architecture (AR)

#### FIRST YEAR

##### FIRST QUARTER

AR 101	Basic Design	4
AT 101	Basic Drawing	2
DR 101	Intro. to the Arts	1
EH 101	English Comp.	5
MH 111	Intr. College Math.	5
MS	Military Training	1
PE	Physical Education	1

##### SECOND QUARTER

AR 102	Basic Design	4
AT 102	Basic Drawing	2
DR 102	Intro. to the Arts	1
EH 102	English Comp.	5
MH 112	Intr. College Math.	5
MS	Military Training	1
PE	Physical Education	1

##### THIRD QUARTER

AR 103	Basic Design	4
AT 103	Basic Drawing	2
DR 103	Intro. to the Arts	1
EH 108	Classical Literature	5
MH 161	Anal. Geom. & Cal.	5
MS	Military Training	1
PE	Physical Education	1

#### SECOND YEAR

AR 201	Arch. Design	4
AR 271	Arch. Graphics	2
PS 205	Physics	5
MH 262	Anal. Geom. & Cal.	5
MS	Military Training	1
PE	Physical Education	1

AR 202	Arch. Design	4
AR 272	Arch. Graphics	2
PS 206	Physics	5
MH 263	Anal. Geom. & Cal.	5
MS	Military Training	1
PE	Physical Education	1

AR 203	Arch. Design	4
AR 273	Arch. Graphics	2
AR 233	Materials & Constr.	3
BT 220	Mech. of Structures	5
CE 210	Surveying	3
MS	Military Training	1
PE	Physical Education	1

#### THIRD YEAR

AR 301	Arch. Design	5
AR 361	History & Theory of Architecture	3
BT 311	Structures I	3
PG 211	Psychology	5
	General Elective	3

AR 302	Arch. Design	5
AR 362	History & Theory of Architecture	3
BT 312	Structures II	3
SY 201	General Sociology	5
	General Elective	3

AR 303	Arch. Design	5
AR 363	History & Theory of Architecture	3
BT 313	Structures III	3
AR 374	Planning	2
EC 206	Socio-Economic Foundations	3
	General Elective	3

#### FOURTH YEAR

AR 401	Arch. Design	5
AR 461	History & Theory of Architecture	3
BT 411	Structures IV	3
SY 405	Urban Sociology	5
	General Elective	3

AR 402	Arch. Design	5
AR 462	History & Theory of Architecture	3
BT 412	Structures V	3
BT 452	Bldg. Equipment I	3
	Group Elective	5

AR 403	Arch. Design	5
AR 463	History & Theory of Architecture	3
BT 413	Structures VI	3
BT 453	Bldg. Equipment II	3
AR 423	Working Drawings	2
	General Elective	3

#### FIFTH YEAR

AR 501	Arch. Design	5
AR 521	Professional Practice	5
BT 541	Bldg. Equip. III	2
	Seminar	2
	Group Elective	5

AR 502	Arch. Design	5
AR 522	Professional Practice	5
AR 512	Design Research	2
AT 338	Art History I	5

AR 503	Arch. Design	7
	Seminar	5
	Group Elective	5

Total—279 quarter hours

Five-hour elective courses will include either three courses in advanced structures or electives chosen from the group electives in Economics, English, Foreign Languages, History, Philosophy, Psychology, Sociology, and Speech.

Three-hour elective courses taken in lieu of Advanced ROTC will be chosen from the following: Art, Economics, English, History, Music, Philosophy, Religion, and Sociology.

Seminars will be chosen from the following list:

AR 558	Seminar in Contemporary Concepts	5
AR 559	Seminar in Historical Problems	5
AR 560	The Architect and Society	2
AR 561	Seminar in Urban Design	2



## Honors Program in Architecture

Beginning in the fourth year of the curriculum in Architecture, superior students capable of independent study may be permitted on recommendation of the Committee on Honors Program to pursue an approved sequence of study designed to develop a field of concentration. Following nomination by the Committee, each student shall submit a plan of study for approval before commencing the work. The Program shall comprise a total of 20 hours of credit in the chosen area of study, of which at least 5 hours shall be spent in independent study directed by the Committee. At least 15 hours of normally required elective credit shall be planned as related courses. Appropriate extra assignments in these courses shall be arranged by the Committee for students enrolled and a high level of performance shall be maintained in all work. At the option of the Committee a comprehensive examination appropriate to the study may be required.

Upon successful completion of the work the candidate shall be awarded the degree Bachelor of Architecture (Honors Program). A total of 281 hours is required for graduation under this Program.

## Interior Design

The curriculum in Interior Design seeks to prepare the student to take his place as a professional specialist in the design of interior space. As such, he expects to assume a responsible role among those who shape physical environment. His primary interest in the development of interiors is concerned with the social, historical and technical implications of those aspects of space, surface and material which distinguish his work. His training will enable him to develop a practice as a private consultant, as a designer of furniture and textiles, and as a valuable associate of the architectural design team.

### Curriculum in Interior Design (ID)

#### FIRST YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
AR 101	Basic Design .....4	AR 102	Basic Design .....4	AR 103	Basic Design .....4
AT 101	Basic Drawing .....2	AT 102	Basic Drawing .....2	AT 103	Basic Drawing .....2
DR 101	Intro. to the Arts .1	DR 102	Intro. to the Arts .1	DR 103	Intro. to the Arts .1
EH 101	English Comp. ....5	EH 102	English Comp. ....5	EH 108	Classical Literature 5
FL 121	Elem. French or	FL 122	Elem. French or	FL 221	Intermediate French or
FL 241	Elem. Italian .....5	FL 242	Elem. Italian .....5	FL 341	Intermediate Italian 5
MS	Military Training ....1	MS	Military Training ....1	MS	Military Training ....1
PE	Physical Education .1	PE	Physical Education .1	PE	Physical Education .1

#### SECOND YEAR

AR 201	Arch. Design .....4	AR 202	Arch. Design .....4	AR 203	Arch. Design .....4
AR 271	Arch. Graphics .....2	AR 272	Arch. Graphics .....2	AR 273	Arch. Graphics .....2
AR 361	History & Theory of Architecture .....3	AR 362	History & Theory of Architecture .....3	AR 363	History & Theory of Architecture .....3
AR 215	Elements of I.D. ....3	AR 216	Elements of I.D. ....2	EH 208	Lit. of Western World .....3
TT 221	Weaving & Design 5	AR 233	Materials & Constr. 3	PG 211	Gen. Psychology ....5
MS	Military Training ....1	Elective	.....3	MS	Military Training ....1
PE	Physical Education .1	MS	Military Training ....1	PE	Physical Education .1
		PE	Physical Education .1		

THIRD YEAR		
FIRST QUARTER	SECOND QUARTER	THIRD QUARTER
AR 305 Interior Design .....5	AR 306 Interior Design .....5	AR 307 Interior Design .....5
AR 461 History & Theory of Architecture .....3	AR 462 History & Theory of Architecture .....3	AR 463 History & Theory of Architecture .....3
AR 365 Period Interiors .....2	AR 366 Period Interiors .....2	AR 367 Contemp. Interiors .....2
EC 200 Gen. Economics .....5	EC 331 Marketing .....5	SY 201 Intr. to Sociology .....5
Elective .....3	Elective .....3	Elective .....3
FOURTH YEAR		
AR 405 Interior Design .....5	AR 406 Interior Design .....5	AR 407 Interior Design .....5
AR 441 Professional Practice 2	AR 442 Professional Practice 2	AR 432 Materials & Finishes 2
Group Elective .....5	AT 338 Art History .....5	AR 435 Methods of I.D. .....5
Group Elective .....5	AR 408 Int. Des. Research 2	Elective .....3
	Elective .....3	

### Total—217 quarter hours

Five-hour elective courses will be chosen from the group electives in Economics, English, Foreign Languages, History, Philosophy, Psychology, Sociology, and Speech.

During the third and fourth years adjustment will be made for those students taking advanced ROTC.

### GROUP ELECTIVES

For students in Architecture and Interior Design

AR 559 Seminar in Historic Problems	IHY 209 National Government
AT 325 Oil Painting	HY 311 Medieval History
BT 521-2-3 Advanced Structures I-II-III	HY 312 Modern European History
EC 305 Geography of North America	HY 404 Recent United States History
EC 341 Business Law	HY 407 Political Science
EC 357 Economic History of Europe	PA 307 Scientific Reasoning
EC 358 Economic History of the U.S.	PA 320 Formal Logic
EC 452 Comparative Economic Systems	PA 325 Aesthetics
EC 480 Economic Development of the South	PA 410 Ancient and Medieval Philosophy
EH 253-4 Literature in English	PA 420 Modern Philosophy
EH 352 Contemporary Fiction	PA 430 Contemporary Philosophy
EH 353 Contemporary Drama	PG 330 Social Psychology
EH 357-8 Survey of American Literature	SP 229 Voice and Diction
EH 361 History of the English Drama	SP 231 Essentials of Public Speaking
EH 390 Advanced Composition	SP 253 Group Leadership
EH 410 European Literature	SP 273 Group Discussion
EH 450 Contemporary Poetry	SY 201 Introductory Sociology
FL 121-2-221 French	SY 301 Sociology of the Family
FL 131-2-231 Spanish	SY 401 Population Problems
FL 241-2-341 Italian	SY 403 Regional Sociology
FL 151-2-251 German	SY 405 Urban Sociology

## Industrial Design

Industrial Design relates machine-produced objects to man, whether it is a doorhandle, children's toy, chair, automobile, cooking pot, or a therapeutic machine.

The professional Industrial Designer works as a leading team member on the development of almost any object of everyday use. He studies the total impact of a probable object upon its user, and creates from this viewpoint a useful object which improves the human environment.

Industrial Design is thus an integrating activity in which different abstract data and points of view from technology, art, science and humanities are transformed and physically embodied into the form, structure, and functions of a mass produced object for practical and aesthetic use.

The four-year curriculum leads to the professional degree of Bachelor of Industrial Design. Graduates will qualify for positions in Industrial Design offices, in various industries, or as independent consultant designers.

## Curriculum in Industrial Design (IN)

FIRST YEAR			THIRD QUARTER		
FIRST QUARTER			SECOND QUARTER		
AR 101 Basic Design .....	4	AR 102 Basic Design .....	4	AR 103 Basic Design .....	4
AT 101 Basic Drawing .....	2	AT 102 Basic Drawing .....	2	AT 103 Basic Drawing .....	2
DR 101 Intro. to the Arts .....	1	DR 102 Intro. to the Arts .....	1	DR 103 Intro. to the Arts .....	1
EH 101 English Comp. ....	5	EH 102 English Comp. ....	5	CH 103 General Chemistry ..	4
MH 111 Intro. College Math. 5		MH 112 Intro. College Math. 5		CH 103L Chemistry Lab. ....	1
IL 101 Woodworking .....	1	IL 102 Welding Sci. & .....		PA 301 Intro. to Philosophy 3	
MS Military Training .....	1	Appl. ....	1	EG 102 Engr. Drawing I .....	2
PE Physical Education .....	1	MS Military Training .....	1	IL 103 Machine Tool Lab. ....	1
		PE Physical Education .....	1	MS Military Training .....	1
				PE Physical Education .....	1
SECOND YEAR			THIRD YEAR		
AR 210 Industrial Design I 5		AR 211 Industrial Design II 5		AR 212 Industrial Design III 5	
AT 212 Graphic Processes ..5		AR 222 Tech. Illustration ..5		AR 223 Industrial Design .....	5
AR 221 Mats. & Technology 5		PG 211 Gen. Psychology ....5		Methods .....	5
EG 104 Descr. Geometry .....	2	EG 105 Engr. Drawing II .....	2	EG 204 Kinematics of .....	
IL 104 Sheet Mtl. Des. ....		IL 105 Foundry Technology 1		Machines .....	3
& Fab. ....	1	MS Military Training .....	1	PS 204 Survey in Physics .....	5
MS Military Training .....	1	PE Physical Education .....	1	MS Military Training .....	1
PE Physical Education .....	1			PE Physical Education .....	1
AR 310 Industrial Design IV 5		AR 311 Industrial Design V 5		AR 312 Indus. Design VI .....	5
SP 231 Ess. Public Speaking 5		AT 338 Art History I .....	5	PA 307 Scien. Reasoning .....	5
EC 200 Gen. Economics ....5		IL 308 Gages & Measure. 5		EC 331 Prin. of Marketing .....	5
*HY 204 Hist. of Modern .....		*EH 385 Impact of Science & .....		*IL 302 Mfg. Proc.: .....	
World .....	3	Tech. on Mod. Lit. 3		Machining .....	3
FOURTH YEAR			FIFTH YEAR		
AR 410 Industrial .....		AR 411 Indus. Design VIII 5		AR 412 Industrial Des. ....	
Design VII .....	5	PA 325 Aesthetics, or .....		Thesis .....	5
PG 461 Indus. Psychology 5		PA 320 Formal Logic .....	5	AR 565 Seminar in Ind. ....	
SY 408 Industrial Sociology 5		IL 408 Probs. in Machining 5		Des. ....	5
*IL 303 Mfg. Proc.: Shaping, .....		*PG 311 Behavior of Man .....	3	Advanced Elective .....	5
Forming & Fab. ....	3			*SY 311 Tech. & Soc. ....	
				Change .....	3

\* Not required of students in Advanced ROTC Program.

Total—228 quarter hours

## Department of Art

The Department of Art is primarily concerned with professional education in Art. Its curricula are directed toward training students who wish to become professional designers or practitioners in the fine arts. To this end a program of studio courses is combined with studies of the functions and historical background of the visual arts. Courses in general education promote in the student a comprehension of his responsibilities to the society and culture in which he lives. Two curricula are offered: Visual Design and Fine Arts, both leading to the degree of Bachelor of Fine Arts.

Students in the School of Education may elect a minor, major, or special major in Art (See page 153). Students in the School of Science and Literature may elect a minor (15 hours) or a double minor (30 hours) in Art.

The Department of Art is a member of the National Association of Schools of Art and the College Art Association.

## Fine Arts

The two-year basic course in Fine Arts closely resembles that of Visual Design. Both emphasize a fundamental grasp of drawing, design, color, tex-

ture and material, and both seek to stimulate a creative use of these elements. Academic studies in languages and the social sciences provide an understanding of cultural heritages, and of human needs and behavior.

In his third year, with faculty approval, the student enters advanced courses in painting, sculpture, and printmaking. Preferences are emphasized through art electives and through academic electives from other areas of the University.

Graduates in Fine Arts may elect to practice in their chosen fields or to teach at advanced levels. Students who contemplate teaching as a career should plan to work toward a Master of Fine Arts degree at this or another institution.

### Curriculum in Fine Arts (FA)

FIRST YEAR		
FIRST QUARTER	SECOND QUARTER	THIRD QUARTER
AT 105 Drawing I .....5	AT 106 Drawing II .....5	AT 107 Drawing III .....5
AT 181 Design Fundamentals I .....5	AT 113 Perspective .....3	AT 182 Design Fundamentals II .....5
EH 101 English Comp. ....5	EG 102 Engr. Drawing I ....2	FL 121 Elementary French 5
MS Military Training ..1	EH 102 English Comp. ....5	MS Military Training ..1
PE Physical Education ..1	MS Military Training ..1	PE Physical Education ..1
	PE Physical Education ..1	
SECOND YEAR		
AT 227 Sculpture I .....5	AT 222 Painting I .....5	AT 224 Painting II .....5
AT 211 Lettering .....5	AT 205 Figure Drawing I ..5	AT 215 Figure Construction 5
FL 122 Elementary French 5	HY 207 World History .....5	HY 208 World History .....5
MS Military Training ..1	MS Military Training ..1	MS Military Training ..1
PE Physical Education ..1	PE Physical Education ..1	PE Physical Education ..1
THIRD YEAR		
AT 322 Painting III .....5	AT 305 Printmaking I .....5	AT 324 Painting IV .....5
AT 307 Figure Drawing III 5	AT 327 Sculpture II .....5	AT 405 Printmaking II .....5
AT 338 Art History I .....5	PG 211 Psychology .....5	EH 253 Lit. in English .....5
*FA 301 Intro. to Philosophy .....3	*FA 302 Intro. to Ethics ....3	Elective .....3
FOURTH YEAR		
AT 339 Art History II .....5	AT 422 Painting V .....5	AT 498 Thesis .....5
AT Art Elective .....5	AT Art Elective .....5	AT Art Elective .....5
PA 325 Aesthetics .....5	EH Adv. English Elec. 5	Elective .....5
Elective .....3	Elective .....3	Elective .....3

\* Six hours of Advanced ROTC may be substituted for PA 301 and 302.

Total—210 quarter hours

### Visual Design

The program in Visual Design gives fundamental training in the techniques of visual communication. Following a two-year course in basic art principles, the student, with faculty approval, enters Visual Design. A core curriculum emphasizes the techniques of drawing for reproduction, lettering and typographical layout. The student is encouraged to think creatively within the limits of materials and processes. Beginning the third year, the student develops special interests in painting, printmaking, sculpture, illustration or fashion through a series of design electives. Courses in economics, sociology, psychology and other academic subjects further an understanding of the function of design in commerce and industry. This breadth of background increases the possibility of future advancement to administrative levels.

## Curriculum in Visual Design (VD)

## FIRST YEAR

## FIRST QUARTER

AT 105	Drawing I .....	5
AT 181	Design Fundamentals I .....	5
EH 101	English Comp. ....	5
MS	Military Training ....	1
PE	Physical Education ..	1

## SECOND QUARTER

AT 106	Drawing II .....	5
AT 113	Perspective .....	3
EG 102	Engin. Drawing I ..	2
EH 102	English Comp. ....	5
MS	Military Training ....	1
PE	Physical Education ..	1

## THIRD QUARTER

AT 107	Drawing III .....	5
AT 182	Design Fundamentals II .....	5
HY 107	American History ..	5
MS	Military Training ....	1
PE	Physical Education ..	1

## SECOND YEAR

AT 227	Sculpture I .....	5
AT 211	Lettering .....	5
EH 253	Lit. in English .....	5
MS	Military Training ....	1
PE	Physical Education ..	1

AT 222	Painting I .....	5
AT 205	Figure Drawing I ..	5
AT 212	Graphic Processes ..	5
MS	Military Training ....	1
PE	Physical Education ..	1

AT 224	Painting II .....	5
AT 215	Artistic Anatomy ..	5
PG 211	Psychology .....	5
MS	Military Training ....	1
PE	Physical Education ..	1

## THIRD YEAR

AT 381	Visual Design I .....	5
AT 307	Figure Drawing II ..	5
AT 338	Art History I .....	5
	Elective .....	3

AT 382	Visual Design II ..	5
AT 355	Illustration I .....	5
AT 339	Art History II .....	5
	Elective .....	3

AT 383	Visual Design III ..	5
AT 361	Fashion I .....	5
EC 200	General Economics ..	5
	Elective .....	3

## FOURTH YEAR

AT 481	Visual Design IV ..	5
AT	Art Elective .....	5
EH	Adv. English .....	5
	Elective .....	5
	Elective .....	3

EC 331	Marketing Prin. ....	5
AT	Art Elective .....	5
AT	Art Elective .....	5
	Elective .....	3

AT 486	Thesis .....	5
AT	Art Elective .....	5
	Elective .....	5
	Elective .....	3

Total—210 quarter hours

## Graduate Work in Art

Students who hold the degree of Bachelor of Visual Arts, Fine Arts, or a similar degree, are eligible to apply to the Dean of the Graduate School for admission to the graduate course leading to the degree Master of Fine Arts. For details examine the Bulletin of the Graduate School.

## Department of Building Technology

The Department of Building Technology offers courses concerned with the structural design of buildings, the design of mechanical and other equipment for buildings, the practical application of building materials, the estimation of building costs, methods of construction and field erection procedures. These courses lead to the degree of Bachelor of Building Construction.

## Curriculum in Building Construction (BC)

## FIRST YEAR

## FIRST QUARTER

BT 104	Intr. to Building ....	5
EH 101	English Comp. ....	5
MH 111	Intr. College Math. ..	5
MS	Military Training ....	1
PE	Physical Education ..	1

## SECOND QUARTER

BT 105	Drawing & Proj. ....	5
EH 102	English Comp. ....	5
MH 112	Intr. College Math. ..	5
MS	Military Training ....	1
PE	Physical Education ..	1

## THIRD QUARTER

BT 106	Matls. & Constr. ....	5
MH 161	Anal. Geom. & Cal. ..	5
PS 205	Physics .....	5
MS	Military Training ....	1
PE	Physical Education ..	1

## SECOND YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
EC 200	Gen. Economics .....5	EC 213	Engr. Accounting ....5	BT 220	Mech. of Structures 5
MH 262	Anal. Geom. & Cal. 5	MH 263	Anal. Geom. & Cal. 5	EC 214	Cost Control .....5
PS 206	Physics .....5	IL 101	Woodworking .....1	IL 102	Welding Science
IL 104	Sheet Metal		Elective .....5		& Application .....1
	Des. & Fab. ....1	MS	Military Training ....1		Elective .....5
MS	Military Training ....1	PE	Physical Education ..1	MS	Military Training ....1
PE	Physical Education ..1			PE	Physical Education ..1

## THIRD YEAR

BT 311	Structures I .....3	BT 312	Structures II .....3	BT 313	Structures III .....3
BT 367	History of Bldg. I ..3	BT 368	Hist. of Bldg. II ....3	BT 369	Hist. of Bldg. III ....3
CE 201	Surveying .....5	PA 307	Scientific Reasoning 5	EC 445	Indus. Relations or
	Group Elective .....5		Group Elective .....5	EC 350	Labor Problems .....5
	Adv. ROTC or		Adv. ROTC or		Group Elective .....5
	Elective .....3		Elective .....3		Adv. ROTC or
					Elective .....3

## FOURTH YEAR

BT 433	Constr. Methods	BT 422	Constr. Prob. II .....5	BT 490	Building Const.
	& Estimating .....5	BT 412	Structures V .....3		Thesis .....7
BT 421	Constr. Prob. I .....5	BT 452	Bldg. Equipment I ..3	BT 453	Bldg. Equipment II 3
BT 411	Structures IV .....3		Group Elective .....5		Technical Elective ..5
	Elective .....3		Adv. ROTC or		Adv. ROTC or
	Adv. ROTC or		Elective .....3		Elective .....3
	Elective .....3				

Total—218 quarter hours

Note: Five-hour elective courses will be chosen from the group electives in Economics, English, Foreign Languages, History, Psychology, Sociology, Speech, and Town Planning.

Note: Three-hour elective courses taken in lieu of Advanced ROTC will be chosen from the following: Art, Economics, English, History, Music, Philosophy, and Religion.

## GROUP ELECTIVES

For students in Building Construction.

BT 521-2-3	Advanced Structures I-II-III	FL 121-2-221	French
EC 305	Geography of North America	FL 131-2-231	Spanish
EC 323	Real Estate	FL 241-2-341	Italian
EC 341	Business Law	FL 151-2-251	German
EC 345	Statistics	HY 206	United States Government
EC 357	Economic History of Europe	HY 209	National Government
EC 358	Economic History of the U.S.	HY 311	Medieval History
EC 402	American Industries	HY 312	Modern European History
EC 442	Personnel Management	HY 313	Recent European History
EC 452	Comparative Economic Systems	HY 314	United States Colonial History
EC 460	Economic Development of the South	HY 404	Recent United States History
EC 475	Economics of Public Utilities	HY 406	The Civil War and Reconstruction
EH 253-4	Literature in English	HY 408	United States Political Parties
EH 352	Contemporary Fiction	HY 451	The Far East
EH 353	Contemporary Drama	HY 452	History of Latin America
EH 357-8	Survey of American Literature	HY 460	Great Leaders of History
EH 361	History of the English Drama	HY 482	History of the South
EH 363-4	Eighteenth Century English Literature	PA 325	Aesthetics
EH 371	The American Short Story	PA 420	Modern Philosophy
EH 372	The American Novel	PG 211	General Psychology
EH 390	Advanced Composition	PG 330	Social Psychology
EH 410	European Literature	SY 201	Introductory Sociology
EH 450	Contemporary Poetry	SP 231	Essentials of Public Speaking
EH 451-2	Shakespeare	SY 301	Sociology of the Family
EH 457	Victorian Literature	SY 304	Race and Culture
EH 459	Poetry and Prose of the Elizabethan Period	SY 401	Population Problems
EH 481-2	English Novel	SY 402	Social Theory
EH 491	American Poetry	SY 403	Regional Sociology
		SY 405	Urban Sociology
		SY 408	Industrial Sociology

Students who desire to take a second degree in Civil Engineering after graduation in Building Construction can do so in a minimum of four quarters,



by substituting in the Building Construction curriculum Physics 201, 202, 203 in place of Physics 205, 206; and by taking Surveying 203 and Chemistry 103-103L, and 104-104L. By using electives and by carrying a one or two hour overload in some quarters, these substitutions and additions need not prolong the completion of the requirements for the Building Construction degree beyond the normal length of twelve quarters.

The additional training to be obtained from this extra work in Civil Engineering will provide strong supplementary skills for any member of the building industry.

### Master of Building Construction

Students holding the degree of Bachelor of Building Construction are eligible to apply to the Dean of the Graduate School for admission to the graduate course leading to the degree of Master of Building Construction. The candidate must complete satisfactorily the following curriculum, or its equivalent, as approved by the Dean of the Graduate School, totaling 60 quarter hours.

CE 407 Municipal Engineering.....	5
EC 434 Purchasing .....	5
EC 450 Job Evaluation and Incentive Systems.....	5
BT 605-6-7 Graduate Research in Building.....	15
BT 621-2-3 Graduate Construction Design.....	15
CE 630 Advanced Stress Analysis.....	5
BT 699 Research and Thesis.....	10

### Department of Drama

The courses in Drama offer to those interested in the various aspects of the theatre a well-balanced combination of theoretical study and practical work in play production, acting, and stagecraft. Class work is closely associated with the university dramatic group, the Auburn Players. Students in all courses with laboratory are expected to participate in the production of plays. Much attention is given to those who intend to direct dramatic work in schools and little theatres.

For the layman who desires an appreciative understanding of the theatre, the courses, Dramatic Production, Acting and Stage Techniques, Directing, Acting and Makeup, Stage Mechanics, Dramatic Theory, Drama Appreciation I and II, and the general course in theatre work, Dramatics, may be elected. Students from all schools are welcomed at the tryouts of the Auburn Players. For the student wishing to major in Drama a full program of courses is offered leading to the Bachelor of Arts degree, with options in Directing and Stagecraft. Drama may be taken as a major or minor in the School of Education (See page 153) or as a minor in the School of Science and Literature (See page 194). Attendance at student convocations each Tuesday is compulsory.

#### Curriculum in Drama (DR)

FIRST YEAR		
FIRST QUARTER	SECOND QUARTER	THIRD QUARTER
DR 104 Dram. Production ..5	DR 105 Acting and Stage Techniques ..5	DR 201 Directing ..5
EH 101 English Comp. ....5	EH 102 English Comp. ....5	*FL221 Intern. French ..5
*FL121 Elem. French ..5	*FL122 Elem. French ..5	PG 211 Psychology ..5
DR 101 Intr. to Arts .....1	DR 102 Intr. to Arts .....1	DR 103 Intr. to Arts .....1
MS Military Training ....1	MS Military Training ....1	MS Military Training ....1
PE Physical Education ..1	PE Physical Education ..1	PE Physical Education ..1

## SECOND YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
DR 202	Acting & Make-Up ...5	DR 203	Stage Mechanics ...5	DR 204	Dramatic Theory ...5
EH 253	Lit. in English ...5	EH 254	Lit. in English ...5	HY 208	World History ...5
SP 229	Voice & Diction** ...5	HY 207	World History ...5	SY 201	Intr. Sociology ...5
MS	Military Training ...1	MS	Military Training ...1	MS	Military Training ...1
PE	Physical Education ...1	PE	Physical Education ...1	PE	Physical Education ...1

## THIRD YEAR

DR 310	World Theatre ...5	AT 339	Art History II ...5	DR 312	World Theatre ...5
EH 410	European Lit. ...5	DR 311	World Theatre ...5	EH 452	Shakespeare ...5
MU 373	Apprs. of Music ...3	EH 451	Shakespeare ...5	MU	Music elective ...3
AT 338	Art History I ...5	MU 376	Music for Ballet and Theatre ...3		Elective ...5

## FOURTH YEAR

DR 401	Adv. Directing ...5	DR 402	Adv. Directing ...5	DR 403	Adv. Directing ...5
DR 413	Twentieth Century Theatre ...5		Elective ...5		Elective ...5
	Elective ...5		Elective ...5		Elective ...5
	General Elective ...3		General Elective ...3		General Elective ...3

Total—213 quarter hours

\* Another language may be substituted for French with the approval of the Department Head. If a student has already had some foreign language, he would normally be expected to continue with it until a reading knowledge is gained.

\*\* With this single exception, the first two years of work will be the same for all students in Drama. In the Stagecraft Option, a substitution will be made for SP 229.

For Stagecraft Majors, DR 407-8-9 would replace DR 401-2-3.

## Department of Music

The Department of Music provides instruction and performing experience to students interested in developing their talents in music. The courses of study provided by the Department have been created to present a balance between creative skills and academic studies, allowing at the same time a certain flexibility to meet individual requirements.

The Department of Music offers to the Music Major a four-year curriculum leading to the degree Bachelor of Music, with majors in (A) Applied Music or (B) Theory and Composition. These programs provide preparation for the professional field of performance and for private or college teaching of applied music, theory, and composition. They also provide training for church organists and choir directors.

For the student wishing to major in Music History and Literature, the Department of Music offers a program of studies leading to the Bachelor of Arts degree. This degree is a cultural, not a professional degree.

The Department of Music offers a group of general elective courses of interest and value to all University students that they may acquaint themselves with music as one aspect of a liberal culture either as appreciative listeners or as trained participants. Courses in Applied Music consist of individual instruction in voice and in the playing of the piano, violin, organ, 'cello, and all woodwind and brass instruments. Courses in ensemble playing, band, orchestra, glee clubs, choir, and opera workshop are also offered to students in all curricula.

## Professional Curriculum in Music (MU)

## (A) Applied Music Major

## FIRST YEAR

FIRST QUARTER			SECOND QUARTER			THIRD QUARTER		
EH 101	English Comp.	.....5	EH 102	English Comp.	.....5	HY 107	United States Hist.	5
MU 131	Music Theory I	.....3	MU 132	Music Theory II	.....3	MU 133	Music Theory III	3
MU 151	Survey of Mu. Lit.	1	MU 152	Survey of Mu. Lit.	1	MU 153	Survey of Mu. Lit.	1
MU	Major Instrument	.....3	MU	Major Instrument	.....3	MU	Major Instrument	3
MU	*Minor Instrument	.....1	MU	*Minor Instrument	.....1	MU	*Minor Instrument	1
MU	Perf. Group	.....1	MU	Perf. Group	.....1	MU	Perf. Group	1
MU	Ensemble	.....1	MU	Ensemble	.....1	MU	Ensemble	1
MS	Military Training	.....1	MS	Military Training	.....1	MS	Military Training	1
PE	Physical Education	.....1	PE	Physical Education	.....1	PE	Physical Education	1

## SECOND YEAR

EH 253	English Lit.	.....5	EH 254	English Lit.	.....5	HY 208	World History	5
MU 231	Music Theory IV	.....3	MU 232	Music Theory V	.....3	MU 233	Music Theory VI	3
MU 251	Survey of Mu. Lit.	1	MU 252	Survey of Mu. Lit.	1	MU 253	Survey of Mu. Lit.	1
MU	Major Instrument	.....3	MU	Major Instrument	.....3	MU	Major Instrument	3
MU	Minor Instrument	.....1	MU	Minor Instrument	.....1	MU	Minor Instrument	1
MU	Perf. Group	.....1	MU	Perf. Group	.....1	MU	Perf. Group	1
MU	Ensemble	.....1	MU	Ensemble	.....1	MU	Ensemble	1
MS	Military Training	.....1	MS	Military Training	.....1	MS	Military Training	1
PE	Physical Education	.....1	PE	Physical Education	.....1	PE	Physical Education	1

## THIRD YEAR

FL	Foreign Language	.....5	FL	Foreign Language	.....5	FL	Foreign Language	5
MU 334	Counterpoint I	.....3	MU 335	Counterpoint II	.....3	MU 336	Counterpoint III	3
MU 351	Music History I	.....3	MU 352	Music History II	.....3	MU 353	Music History III	3
MU	Major Instrument	.....3	MU	Major Instrument	.....3	MU	Major Instrument	3
MU	Ensemble	.....1	MU	Ensemble	.....1	MU	Ensemble	1
MU	Elective	.....3	MU	Elective	.....3	MU	Elective	3

## FOURTH YEAR

MU 337	Arranging	.....3	MU 432	Music Analysis	.....3	SY 201	Intr. Sociology	5
MU 431	Music Analysis	.....3	EC 200	Gen. Economics	.....5	MU 381	Conducting	3
MU	Major Instrument	.....3	MU	Major Instrument	.....3	MU	Applied Lit.	3
MU	Ensemble	.....1	MU	Ensemble	.....1	MU	Major Instrument	3
MU	Elective	.....5	MU	Applied Pedagogy	.....3	MU	Ensemble	1
MU	Elective	.....3	MU	Elective	.....3	MU	Elective	3

\* Minor instrument must be piano for non-piano majors.

Total—210 quarter hours

## (B) Theory and Composition Major

## FIRST YEAR

FIRST QUARTER			SECOND QUARTER			THIRD QUARTER		
EH 101	English Comp.	.....5	EH 102	English Comp.	.....5	HY 107	United States Hist.	5
MU 131	Music Theory I	.....3	MU 132	Music Theory II	.....3	MU 133	Music Theory III	3
MU 151	Survey of Mu. Lit.	1	MU 152	Survey of Mu. Lit.	1	MU 153	Survey of Mu. Lit.	1
MU 181	Applied Piano	.....2	MU 182	Applied Piano	.....2	MU 183	Applied Piano	2
MU 116	Woodwind Class	.....1	MU 117	Woodwind Class	.....1	MU 118	Woodwind Class	1
MU 110	String Class	.....1	MU 111	String Class	.....1	MU 112	String Class	1
MU	Perf. Group	.....1	MU	Perf. Group	.....1	MU	Perf. Group	1
MU	Ensemble	.....1	MU	Ensemble	.....1	MU	Ensemble	1
MS	Military Training	.....1	MS	Military Training	.....1	MS	Military Training	1
PE	Physical Education	.....1	PE	Physical Education	.....1	PE	Physical Education	1

## SECOND YEAR

EH 253	English Lit.	.....5	EH 254	English Lit.	.....5	HY 208	World History	5
MU 231	Music Theory IV	.....3	MU 232	Music Theory V	.....3	MU 233	Music Theory VI	3
MU 251	Survey of Mu. Lit.	1	MU 252	Survey of Mu. Lit.	1	MU 253	Survey of Mu. Lit.	1
MU 107	Voice Class	.....1	MU 108	Voice Class	.....1	MU 119	Percussion Class	1
MU 113	Brass Class	.....1	MU 114	Brass Class	.....1	MU 115	Brass Class	1
MU 281	Applied Piano	.....2	MU 282	Applied Piano	.....2	MU 283	Applied Piano	2
MU	Perf. Group	.....1	MU	Perf. Group	.....1	MU	Perf. Group	1
MU	Ensemble	.....1	MU	Ensemble	.....1	MU	Ensemble	1
MS	Military Training	.....1	MS	Military Training	.....1	MS	Military Training	1
PE	Physical Education	.....1	PE	Physical Education	.....1	PE	Physical Education	1

## THIRD YEAR

## FIRST QUARTER

FL	Foreign Language	.5
MU 334	Counterpoint I	.3
MU 351	Music History I	.3
MU 331	Modern Harmony	.3
MU 381	Applied Piano	.1
	Elective	.3

## SECOND QUARTER

FL	Foreign Language	.5
MU 335	Counterpoint II	.3
MU 352	Music History II	.3
MU 454	Instrumental Lit.	.3
MU 382	Applied Piano	.1
	Elective	.3

## THIRD QUARTER

FL	Foreign Language	.5
MU 336	Counterpoint III	.3
MU 353	Music History III	.3
MU 361	Conducting	.3
MU 383	Applied Piano	.1
	Elective	.3

## FOURTH YEAR

MU 431	Music Analysis	.3
MU 434	Composition I	.3
MU 437	Orchestration I	.3
MU 481	Applied Piano	.1
	Elective	.5
	Elective	.3

MU 432	Music Analysis	.3
MU 435	Composition II	.3
MU 438	Orchestration II	.3
MU 482	Applied Piano	.1
EC 200	Gen. Economics	.5
	Elective	.3

SY 201	Intr. Sociology	.5
MU 436	Composition III	.3
MU 439	Orchestration III	.3
MU 483	Applied Piano	.1
MU 445	Theory Pedagogy	.3
	Elective	.3

Total—210 quarter hours

Supplementary Requirements for the Professional Degree —  
Bachelor of Music

1. Students concentrating in Applied Music are required to present a junior recital near the close of the third year, and a senior graduation recital during the last year of study.

2. Students concentrating in Music Theory and Composition are required to present an original composition in small form near the close of the third year and a composition in large form during the last year of study.

3. Attendance and performance at student convocations each Wednesday are compulsory.

## Curriculum in Music (MU)

## FIRST YEAR

## FIRST QUARTER

EH 101	English Comp.	.5
FL	Foreign Language	.5
MU 131	Music Theory I	.3
MU 151	Survey of Mu. Lit.	.1
MU	Applied Music	.2
MS	Military Training	.1
PE	Physical Education	.1

## SECOND QUARTER

EH 102	English Comp.	.5
FL	Foreign Language	.5
MU 132	Music Theory II	.3
MU 152	Survey of Mu. Lit.	.1
MU	Applied Music	.2
MS	Military Training	.1
PE	Physical Education	.1

## THIRD QUARTER

FL	Foreign Language	.5
HY 107	United States Hist.	.5
MU 133	Music Theory III	.3
MU 153	Survey of Mu. Lit.	.1
MU	Applied Music	.2
MS	Military Training	.1
PE	Physical Education	.1

## SECOND YEAR

EH 253	English Lit.	.5
HY 207	World History	.5
MU 231	Music Theory IV	.3
MU 251	Survey of Mu. Lit.	.1
MU	Applied Music	.2
MS	Military Training	.1
PE	Physical Education	.1

EH 254	English Lit.	.5
HY 208	World History	.5
MU 232	Music Theory V	.3
MU 252	Survey of Mu. Lit.	.1
MU	Applied Music	.2
MS	Military Training	.1
PE	Physical Education	.1

EC 200	Gen. Economics	.5
SY 201	Intr. Sociology	.5
MU 233	Music Theory VI	.3
MU 253	Survey of Mu. Lit.	.1
MU	Applied Music	.2
MS	Military Training	.1
PE	Physical Education	.1

## THIRD YEAR

MU 351	Music History I	.3
MU 334	Counterpoint I	.3
PG 211	Gen. Psychology	.5
	*Minor	.5

MU 352	Music History II	.3
	**Science or Math.	.5
	*Minor	.5
	Elective	.5

MU 353	Music History III	.3
MU 451	Music Literature	.3
	*Minor	.5
	Elective	.5

## FOURTH YEAR

MU 365	Arranging	.3
MU 431	Analysis	.3
MU 452	Music Literature	.3
	*Minor	.5
	Elective	.3

MU 432	Music Analysis	.3
MU 453	Music Literature	.3
	*Minor	.5
	Electives	.6

AT 331	His. Ptg. & Sculp.	.5
MU 361	Conducting	.3
MU 454	Music Literature	.3
	*Minor	.5
	Elective	.2

Total—210 quarter hours

\*Two minors of 15 quarter hours each will be elected from approved courses in foreign languages and history. Except for foreign languages, subjects must be numbered 200 or above.

\*\* One of the following courses must be selected: PS 204, BY 201, ZY 101, MH 107, MH 181.

### **Supplementary Requirements for Bachelor of Arts Degree**

1. The music courses for the degree are divided into Lower and Upper Divisions. Majors must complete (a) 36 quarter hours of music in the Lower Division (18 hours of theory, 12 hours of applied music, and 6 hours of music literature); (b) a minimum of 36 hours of music in the Upper Division.

2. A comprehensive examination will be given at the end of the sophomore year which must be passed before the student proceeds to the Upper Division music courses.

3. Students concentrating in Music History and Literature are required to write a thesis during the last year of study.

4. History and Literature majors must complete sophomore NASM applied music standards. To meet these requirements additional applied music beyond the second year may be required.

5. Participation in the work of music performance groups is required each quarter with or without credit.

6. Attendance and performances at student convocations each Wednesday are compulsory.

### **Music Education**

For the student wishing to become a teacher of music, the Department of Music offers a full program of studies in conjunction with the School of Education leading toward certification by the State Department of Education.

#### **Program for Minor in Music**

School of Education, see page 153

#### **Program for Major in Music**

School of Education, see page 153

#### **Program for Composite Major-Minor in Music**

School of Education, see page 153

### **Supplementary Requirements for Music Majors and Minors**

1. Music Majors and Minors are required to participate in the work of music performance groups (concert choir, band, or orchestra).

2. Attendance and performances at student convocations each Wednesday are compulsory for Music Majors.

### **Music Organizations**

The several musical organizations, sponsored by the University and directed by the Department of Music, provide excellent training in group music. See index under "Music Organizations." These activities, which are open to students of the University, may be taken without credit, or offered as general elective credit.

### **Graduate Work in Music**

Students who hold a baccalaureate degree in Education with a Major in Music are eligible to apply to the Dean of the Graduate School for admission to the graduate courses leading to the degrees Master of Science and Master of Education with Major in Music. The candidate must complete satisfactorily the following curriculum totaling 45 quarter hours.

Education and Foundation Courses.....	15
Music and Music Education Courses.....	30

# School of Chemistry

CHARLES RICHARD SAUNDERS, *Dean*

THE SCHOOL OF CHEMISTRY offers four-year curricula leading to the degrees of Bachelor of Science in Chemistry, Chemical Engineering, and Laboratory Technology, and advanced work leading to the degrees Master of Science in Chemistry, and Chemical Engineering and to the degree Doctor of Philosophy in Chemistry. The administrative offices, the Emerson R. Miller Library, the auditorium, and the departments of chemistry and laboratory technology are located in the Ross Chemical Laboratory. The department of chemical engineering occupies approximately one-fourth of the Wilmore Engineering Laboratory. This laboratory is conveniently located with respect to the Ross Chemical Laboratory and provides modern and adequate facilities.

## Department of Chemistry

The curriculum in chemistry meets the standards of the accrediting committee of the American Chemical Society. It affords preparation and training for students desiring to equip themselves for work in both pure and applied chemistry.

The curriculum offers training in the fundamentals of the science together with advanced courses in chemistry and physics. General electives are selected from fields especially for their cultural value. All electives must be approved by the dean.

Mathematics 160, 111 or 107 must be satisfactorily completed before, or taken concurrently with, General Chemistry 103 or 111.

### Curriculum in Chemistry (CH)

#### FRESHMAN YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
CH 111	General Chemistry ..5	CH 112	General Chemistry ..5	CH 113	General Chemistry ..5
EH 101	English Comp. ....5	EH 102	English Comp. ....5	HY 107	United States Hist. 5
*MH 160	Intr. College Math. 5	MH 161	Anal. Geometry	MH 262	Analytic Geometry
**LY 101	Library Science ..1		and Calculus .....5		& Calculus .....5
MS	Military Training ....1	MS	Military Training ....1	MS	Military Training ....1
PE	Physical Education ..1	PE	Physical Education ..1	PE	Physical Education ..1

#### SOPHOMORE YEAR

CH 204	Analytical Chem. ....5	CH 205	Analytical Chem. ....5	CH 303	Organic Chemistry ..5
MH 263	Analytic Geometry	MH 264	Analytic Geometry	MH 361	Differential Equa. ..5
	& Calculus .....5		& Calculus .....5	PS 203	Physics-Elec.
PS 201	Physics-Mechanics ..5	PS 202	Physics-Heat,		& Magnetism .....5
MS	Military Training ....1		Sound & Light .....5	MS	Military Training ....1
PE	Physical Education ..1	MS	Military Training ....1	PE	Physical Education ..1
		PE	Physical Education ..1		

#### JUNIOR YEAR

CH 304	Organic Chemistry 5	CH 305	Organic Chemistry ..5	CH 409	Physical Chemistry ..5
CH 407	Physical Chemistry ..5	CH 408	Physical Chemistry ..5	FL 251	Intermed. German ..5
FL 151	Elem. German .....5	FL 152	Elem. German .....5	PS 305	Modern Physics .....5
	Elective .....3		Elective .....3		Elective .....3

\* Students not qualified to take MH 160 are required to take MH 111-112. Only five (5) of these hours will be acceptable towards graduation in lieu of MH 160.

\*\* LY 101 Library Science may be scheduled in any quarter of the freshman year.



## SENIOR YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
CH 404	Organic Analysis (Qualitative) .....5	CH 411	Intermediate Inorganic Chemistry .....5	CH 413	Anal. Chemistry .....5
CH 410	Interm. Inorganic Chemistry .....5	CH 412	Chemical Thermodynamics .....5	PS 304	Spectroscopy .....5
	Electives .....8	EH 390	Adv. Composition .....5		Electives .....8
			Elective .....3		

## Total—211 quarter hours

Women students will take Hygiene in the freshman year and Current Events in the sophomore year in lieu of Military Training.

Advanced military training may be substituted for the three hour humanistic electives in the junior and senior years. Students will be certified to the American Chemical Society as "Certified Graduates" when they have made up the electives for which advanced military training was substituted.

## APPROVED ELECTIVES

HY 206	United States Government .....5	SP 231	Public Speaking .....5
HY 210	State Government .....5	EH 253	Literature in English .....5

The following alternative curriculum may be selected by those students interested in the biological sciences.

## Alternate Curriculum in Chemistry (CH)

## (BIOCHEMISTRY OPTION)

## FRESHMAN YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
CH 111	General Chemistry .....5	CH 112	General Chemistry .....5	CH 113	General Chemistry .....5
EH 101	English Comp. ....5	EH 102	English Comp. ....5	MH 262	Analytic Geometry & Calculus .....5
*MH 160	Intr. College Math. 5	MH 161	Analytic Geometry & Calculus .....5	ZY 101	General Zoology .....5
**LY 101	Library Science .....1	MS	Military Training .....1	MS	Military Training .....1
MS	Military Training .....1	PE	Physical Education .....1	PE	Physical Education .....1
PE	Physical Education .....1				

## SOPHOMORE YEAR

CH 204	Analytical Chem. ....5	CH 205	Analytical Chem. ....5	CH 303	Organic Chemistry .....5
MH 263	Analytic Geometry & Calculus .....5	MH 264	Analytic Geometry & Calculus .....5	PS 202	Physics-Heat, Sound & Light .....5
ZY 102	General Zoology .....5	PS 201	Physics Mechanics .....5	ZY 301	Compar. Anatomy .....5
MS	Military Training .....1	MS	Military Training .....1	MS	Military Training .....1
PE	Physical Education .....1	PE	Physical Education .....1	PE	Physical Education .....1

## JUNIOR YEAR

CH 304	Organic Chemistry .....5	CH 305	Organic Chemistry .....5	CH 409	Physical Chemistry 5
CH 407	Physical Chemistry 5	CH 408	Physical Chemistry 5	EH 390	Adv. Composition .....5
PS 203	Physics-Elec. & Magnetism .....5	ZY 424	Animal Physiology 5	VM 200	Gen. Microbiology .....5
	Elective .....3		Elective .....3		Elective .....3

## SENIOR YEAR

CH 418	Biochemistry .....5	CH 419	Biochemistry .....5	CH 420	Biochemistry .....5
FL 151	Elem. German .....5	FL 152	Elem. German .....5	FL 251	Interm. German .....5
	Electives .....8		Electives .....8		Electives .....8

## Total—211 quarter hours

Note: Advanced military training may be substituted for the three hour humanistic electives in the junior and senior years.

\* Students not qualified to take MH 160 are required to take MH 111-112. Only five (5) of these hours will be acceptable towards graduation in lieu of MH 160.

\*\* LY 101 Library Science may be scheduled in any quarter of the freshman year.

## APPROVED ELECTIVES

HY 107	United States History .....5	SP 231	Public Speaking .....5
HY 206	United States Government .....5	EH 253	Literature in English .....5
HY 210	State Government .....5		

## Department of Chemical Engineering

The rapid growth of the chemical and metallurgical industries, particularly in the South, provides exceptional opportunities for students taking chemical engineering.

The work of the chemical engineer relates to the design, construction, and operation of plants for the production of numerous chemical and industrial products such as coke, cement, petroleum products, paper, synthetic rubber, synthetic fibers, ceramic products and glass.

The program leading to the bachelor's degree in chemical engineering consists almost entirely of broad scientific and engineering principles which have numerous applications in the chemical and related industries. Students who complete the requirements of the master's degree are qualified for better positions and often make more rapid progress than those with only the bachelor's degree.

The broad university training provided, when supplemented by professional experience, enables graduates to qualify for positions as engineers in production, research and development, sales engineering, plant design, and management. Chemical engineers recently are being employed in increasing numbers in nuclear engineering.

The curriculum in chemical engineering is offered under both the regular and the co-operative plan. See the Co-operative Education Program on page 86.

For admission to the chemical engineering curriculum, students registered in the Curriculum in Pre-Chemical Engineering must complete all prescribed courses in mathematics with an average of 1.0.

### Curriculum in Pre-Chemical Engineering (PCN)

#### FIRST YEAR

FIRST QUARTER			SECOND QUARTER			THIRD QUARTER		
CH 111	General Chemistry	.5	CH 112	General Chemistry	.5	CH 113	General Chemistry	.5
EH 101	English Comp.	.5	EH 102	English Comp.	.5	HY 107	United States Hist.	5
MH 160	Intr. College Math.	3	MH 161	Analytic Geometry		MH 262	Analytic Geometry	
EG 102	Eng. Drawing I	.2		& Calculus	.5		& Calculus	.5
*LY 101	Use of the Library	.1	EG 104	Desc. Geometry	.2	EG 105	Engr. Drawing II	.2
MS	Military Training	.1	MS	Military Training	.1	MS	Military Training	.1
PE	Physical Education	.1	PE	Physical Education	.1	PE	Physical Education	.1

#### SECOND YEAR

CH 206	Quant. Analysis	.5	MH 264	Analytic Geometry		CH 303	Organic Chemistry	.5
MH 263	Analytic Geometry			& Calculus	.5	MH 361	Diff. Equations	.5
	& Calculus	.5	PS 202	Physics-Heat,		PS 203	Physics-Elec.	
PS 201	Physics-Mechanics	.5		Sound & Light	.5		& Magnetism	.5
	Humanistic Elective 3		ME 205	Applied Mechanics	.4	CN 201	Chem. Engr.	
MS	Military Training	.1		Humanistic Elective 3			Fundamentals	.3
PE	Physical Education	.1	MS	Military Training	.1	MS	Military Training	.1
			PE	Physical Education	.1	PE	Physical Education	.1

\*LY 101 Library Science may be scheduled in any quarter of the freshman year.

## Curriculum in Chemical Engineering (CN)

## THIRD YEAR

## FIRST QUARTER

CH 407	Physical Chemistry	5
CN 300	Process Calculations	3
CN 304	Organic Chemistry	5
MH 362	Engr. Math. 1	5
	or	
MH 460	Numerical Analysis	5
	or	
MH 467	Math. Statistics	5
ME 202	Materials of Engr.	3

## SECOND QUARTER

CH 408	Physical Chemistry	5
CN 321	Chem. Proc. Ind.	3
CN 324	Fluid Mechanics	4
ME 306	Strength of Mat.	4
	Elective	3

## THIRD QUARTER

CN 322	Organic Process Industries & Thermodynamics	3
CN 326	Heat Transfer	3
CN 326L	Heat Trans. Lab.	2
CN 430	Computer Principles	2
EE 304	Electric Circuits	4
SP 305	Public Speaking	3
	Elective	3

## FOURTH YEAR

CN 423	Unit Operations	3
CN 423L	Unit Op. Lab.	2
CN 426	Engr. Metallurgy	5
CN 432	Instrumentation	4
	Electives	6

CN 424	Mass Transfer	3
CN 424L	Mass Trans. Lab.	2
CN 437	Process Engr.	4
CN 490	Applied Thermodynamics	5
	Electives	6

CN 484	Chemical Engr.: Plant Design	4
CN 491	Kinetics	4
PS 305	Intro. Mod. Phy.	5
	Elective	5

Total—235 quarter hours

## APPROVED ELECTIVES

EH 108	Classical Literature	5
EH 350	Shakespeare's Greatest Plays	3
EH 365	Southern Literature	3
HY 208	World History	5
HY 322	U.S. in World Affairs	3
HY 460	Great Leaders	5
MU 373	Appreciation of Music	3

MU 374	Masterpieces of Music	3
PA 301	Introduction to Philosophy	3
PA 302	Introduction to Ethics	3
PA 307	Scientific Reasoning	5
PA 420	Modern Philosophy	5
PG 311	The Behavior of Man	3

## Department of Laboratory Technology

## Laboratory Technology Curriculum

This course is designed for men and women who wish to prepare themselves for clinical and other laboratory positions, such as public health, bacteriology, etc. With certain minor revisions, it can be used also to prepare for the study of medicine or dentistry.

The curriculum is planned for regular students to schedule courses during the Fall, Winter and Spring quarters only. Transfers or freshmen may enter the course at any quarter and use the Summer quarter to fit themselves to the regular program. All who complete the curriculum satisfactorily are eligible to receive the degree Bachelor of Science in Laboratory Technology.

The majority of the graduates enter the field of clinical medicine as medical technologists. They should plan to attain status as Registered Medical Technologists which is accomplished by interning for one year in an approved hospital and then passing the National Registry of Medical Technologists' written examination. If then desired, the additional Bachelor of Science degree in Medical Technology will be granted. The four-year academic curriculum is recommended.

## Medical Technology Curriculum

An alternate plan is available for those who plan to become medical technologists and who do not obtain the Bachelor of Science degree in Laboratory Technology. This plan leads to the Bachelor of Science degree in Medical Technology. To qualify, the student must take the first nine quarters of the

curriculum, intern for one year in a hospital approved by the American Society of Clinical Pathologists and by the Dean of the School of Chemistry, and pass the course work in the hospital and the National Registry examination. Further requirements are:

(1) The student must complete the first three years of the Laboratory Technology curriculum before interning in a approved hospital in order that the internship can be considered as fulfilling the senior year's residence requirements in lieu of the fourth year on campus.

(2) Auburn University students transferring into Medical Technology must have completed in the Laboratory Technology curriculum one academic year (54 quarter hours) preceding the year of internship.

(3) Students transferring from other institutions into Medical Technology must complete the second and third years of the Laboratory Technology curriculum on campus before interning.

### Curriculum in Laboratory Technology (LT)

#### FRESHMAN YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
CH 103	General Chemistry ..4	CH 104	General Chemistry ..4	CH 105	General Chemistry ..3
CH 103L	Gen. Chem. Lab. ..1	CH 104L	Gen. Chem. Lab. ..1	CH 105L	Gen. Chem. Lab. ..2
MH 111	Intr. College Math. 5	EH 101	English Comp. ....5	EH 102	English Comp. ....5
ZY 101	General Zoology ....5	ZY 102	General Zoology ....5	MH 112	Intr. College Math. 5
PE 111	Hygiene .....1	PE 112	Hygiene .....1	PE 113	Hygiene .....1
PE	Physical Education ..1	PE	Physical Education ..1	PE	Physical Education ..1
*LY101	Library Science .....1	LT 101	Orientation .....1		

\* LY 101 Library Science may be scheduled in any quarter of the freshman year.

#### SOPHOMORE YEAR

CH 206	Quant. Analysis .....5	CH 207	Organic Chemistry ..5	CH 208	Organic Chemistry ..5
EH 141	Med. Vocabulary .....5	PS 206	Physics-Elec., Sound & Light .....5	VM 200	General Micro- biology .....5
PS 205	Physics-Mechanics and Heat .....5	VM 220	Human Anatomy & Physiology .....5	VM 221	Human Anatomy & Physiology .....5
HY 205	Current Events .....1	PE	Physical Education ..1	HY 205	Current Events .....1
PE	Physical Education ..1			PE	Physical Education ..1

#### JUNIOR YEAR

CH 418	Biochemistry .....5	CH 419	Biochemistry .....5	CH 420	Biochemistry .....5
LT 301	Hematology .....5	LT 305	Serology .....5	HY 107	United States Hist. 5
VM 204	Pathogenic Micro- biology .....5	ZY 303	Medical Parasitology .....5	LT 401	Adv. Hematology ....5
	Elective .....3		Elective .....3		Elective .....3

#### SENIOR YEAR

EH 345	Business & Pro- fessional Writing ....5	SP 231	Essentials of Public Speaking .....5	LT 405	Adv. Serology .....5
LT 421	Diagnostic Apparatus .....5	PY 300	Public Health .....5	LT 422	Hospital Lab, Practice .....5
ZY 308	Microbiology .....5		Group Elective .....5	ZY 409	Histology .....5
LT 402	Seminar .....3		Elective .....3		Elective .....3

Total—211 quarter hours

#### APPROVED ELECTIVES

BY 101	General Botany .....5	FL 151	Elementary German .....5
BY 102	General Botany .....5	FL 152	Elementary German .....5
EC 102	Principles of Geography* .....5	PG 211	General Psychology .....5
EC 211	Introductory Accounting .....5	SA 111	Business Typewriting .....5
EC 212	Introductory Accounting .....5	SY 201	Introductory Sociology .....5
FL 121	Elementary French .....5	SY 301	Sociology of the Family .....5
FL 122	Elementary French .....5	ZY 300	Genetics .....5

\* Not open to juniors or seniors.

# School of Education

TRUMAN M. PIERCE, *Dean*

ROBERT L. SAUNDERS, *Assistant Dean*

**T**HE SCHOOL OF EDUCATION is accredited by the National Council for Accreditation of Teacher Education for the preparation of elementary and secondary teachers and school service personnel with the doctor's degree as the highest degree approved.

The School of Education provides professional preparation programs for service in the fields of curriculum and teaching; administration, supervision, and guidance; and psychology. Recognizing school service as a profession with various areas of activity, the School of Education provides training in a number of specialized curricula on both the undergraduate and graduate levels. Undergraduate programs lead to the degrees of Bachelor of Science in Education and the Bachelor of Arts degree in Psychology. Programs administered by the Graduate School lead to the degrees of Master of Education, the Master of Science, Specialist in Education, and Doctor of Education.

## Programs and Degrees

**Vocational, Technical and Practical Arts Education.** — The Department of Vocational, Technical and Practical Arts Education provides a program for the preparation of teachers in vocational agriculture, industrial arts, and in technical education as it relates to post secondary school programs. All programs lead to the degree of Bachelor of Science in Education. These curricula include study in the liberal arts, specialization in the fields of agriculture, industrial arts, or other appropriate subject matter, psychology, educational theory and practice, and laboratory experiences. All curricula will have a common core in professional and vocational education.

**Elementary Education.** — The Department of Elementary Education provides a program for the preparation of teachers for elementary schools. This curriculum leads to the degree of Bachelor of Science in Education and includes study in the liberal arts, psychology, educational theory and practice, laboratory experiences, and provision for concentration of study in one or more subject-matter fields.

**Foundations of Education.** — The Department of Foundations of Education provides a service function within the School of Education. Undergraduate and graduate courses which relate to the total educational enterprise and which are ordinarily included in the program of study of all students in teacher education are offered through this department. Courses in philosophy, sociology and history of education, and research and experimentation are offered.

**Health, Physical Education and Recreation.** — The Department of Health, Physical Education, and Recreation provides a program for the preparation of teachers of health and physical education. This curriculum leads to the degree of Bachelor of Science in Education and includes study in the liberal arts, psychology, educational theory and practice, laboratory experiences, and specialization in health and physical education.

**Psychology.** — The Department of Psychology has a liberal arts program which leads to the degree Bachelor of Arts. This curriculum prepares students for further study in psychology at the graduate level and serves also as a liberal undergraduate education or as pre-professional preparation for medicine and the ministry.

**Secondary Education.** — The Department of Secondary Education provides a program for the preparation of teachers in secondary schools. This curriculum leads to the degree Bachelor of Science in Education and includes study in the liberal arts, specialization in one or more teaching fields, psychology, educational theory and practice, and laboratory experiences. Fields of specialization include Art, Business Education, Dramatic Arts, English, Foreign Languages, Mathematics, Mental Retardation, Music, Science, School Library Science, Social Science, Speech, Speech Correction, and Vocational Home Economics.

### **Graduate**

Graduate programs are offered through the Graduate School in administration, supervision, and guidance; agricultural education; elementary education; health and physical education; secondary education; and psychology. A graduate program is also available in school library service.

Fifth-year programs of study in these areas lead to the degrees Master of Science and Master of Education.

Sixth-year programs in curriculum and teaching, and in administration, supervision, and guidance lead to the degree of Specialist in Education.

A doctoral program leading to the degree of Doctor of Education is offered in the areas of curriculum and teaching; and in administration, supervision and guidance.

Programs of study leading to the respective graduate degrees provide opportunities for advanced study in professional education, psychology, and for concentration in appropriate subject-matter fields related to the professional objectives of graduate students.

For descriptions of graduate programs and degree requirements see Graduate School Bulletin.

## **Related Programs and Services**

### **Teacher Certification Services**

Programs in the School of Education are approved by the National Council for Accreditation of Teacher Education and the Alabama State Board of Education for certifying superintendents, supervisors, principals, guidance personnel, elementary and secondary teachers, and school librarians. Upon satisfactory completion of a prescribed course of study and upon recommendation of the Dean of the School of Education a professional certificate will be issued by the appropriate State Department of Education. Twenty-nine State Departments of Education now have reciprocal agreements for issuing certificates to graduates of institutions accredited by NCATE.

Students in other areas of the University may want to take courses in education and psychology for the purpose of acquiring knowledge and understanding regarding human growth and development, the history and purposes



of education in America, and teaching as a profession. They are encouraged to take such courses, and are eligible to take all courses for which they satisfy prerequisites except the internship in student teaching.

Students who do not take the full program of requirements for a professional certificate may qualify for a non-professional certificate which is valid for one year only and cannot be continued or reinstated.

For detailed requirements for the Professional Certificate (Ranks B, A, or AA), Non-Professional, Emergency Professional, and Trades and Industries Certificates, consult the Alabama State Department of Education Bulletin 1953, No. 7, available in the office of the Dean of the School of Education.

### Student Personnel Services

*Robert L. Saunders, Acting Coordinator*

The Student Personnel Services Program of the School of Education is designed to assist the student in understanding the University and becoming a part of it, in identifying his strengths and limitations, in determining his professional goals, in selecting the proper curriculum in the University, and in securing employment upon graduation.

**Recruitment.**—Able young people are encouraged to consider teaching as a profession. Efforts of organizations such as the Future Teachers of America in the secondary schools and the Student National Education Association in colleges and of individuals and groups in the profession are aimed primarily at seeking out, informing, and encouraging students who show promise for the teaching profession wherever they may be found.

**Financial Aid.**—Opportunities for financial aid are available in the form of part-time employment and loans. One type of loan, the Student Loan Program financed by the National Defense Education Act of 1958, provides low-interest, long-term loan funds that are particularly attractive to School of Education students because of special provision for the prospective public school teacher. The NDEA provides that if a student goes into teaching in a public elementary or secondary school, up to 50 per cent of the principal (plus interest) of the loan may be cancelled.

Information and applications for NDEA loans, other financial aid, and employment may be obtained from the Office of Student Financial Aid.

**Orientation.**—The Orientation Program is designed to provide University personnel with an understanding of the student's background, individuality, and needs and to assist the student in obtaining information about the University and its programs, in learning more about himself, and in selecting professional goals that are compatible with his abilities. All freshmen participate from one to three quarters in an orientation program designed to assist them with personal and professional concerns.

**Counseling.**—Professional assistance is available to students who have problems of an academic, vocational, or personal nature. Each student in the School of Education is assigned to a faculty advisor who assumes the responsibility for assisting the student whenever possible. Other sources of assistance include personnel in the Office of the Dean, classroom teachers, personnel in the Student Counseling Service, the offices of the Dean of Women, the Dean

of Student Affairs, and the Registrar, dormitory head residents and counselors, and ministers of local churches.

**Selection and Retention.**—The selection and retention program is continuous and is designed to induct and retain in teacher education those students who show promise of success in teaching.

Students who are admitted as freshmen to the University and who plan to prepare to teach should enroll in the two-year pre-professional program in the School of Education. The program consists of 90 quarter hours of appropriate general education and other courses selected in relation to the student's professional objective. The curriculum designation for the pre-professional program is ED. During the pre-professional program students will be assisted through orientation, counseling, and regular courses to examine their strengths and limitations and to evaluate these in relation to the many factors which affect academic and professional success.

Students seeking admission to a Teacher Education Curriculum must submit a written application to the Committee on Selection and Admission to Teacher Education. Students may make application no earlier than the quarter in which they will complete 75 quarter hours and should make application before they have earned a total of 100 quarter hours. Criteria of selection include: evidence of adequate scholastic ability, grade point average of 1.0 (C) on all work attempted, evidence of proficiency in English, commitment to teaching, and evidence of emotional stability and lack of undesirable personal characteristics.

Transfer students must apply for admission to teacher education as outlined above and must meet the criteria as outlined. All transfer students must satisfactorily complete at least one quarter (minimum of 15 quarter hours) in the School of Education prior to making application for admission to teacher education.

At the end of the junior year students who have been admitted to teacher education must apply for admission to student teaching. Those applicants who meet the criteria will be admitted to student teaching.

Mature persons with degrees other than in education are invited to make application for study in a curriculum leading to professional certification. Programs of study are available for earning the Class B and A Certificates and the master's degree. Often, work experiences in the teaching profession and other professional fields permit alternative plans for fulfilling the requirements in a particular program of study. Academic background and work experience are evaluated for purpose of developing the most effective program possible for each student.

Applications and specific information about the criteria of selection for admission to teacher education are available from the Student Personnel Office, 203 Thach Hall.

**Placement and Follow-Up.**—The Teacher Placement Service provides, free of charge, assistance to prospective teachers in locating desirable positions and assistance to employers in identifying candidates. Persons interested in placement should contact the Student Personnel Office, 203 Thach Hall. Follow-up studies of successes, failures, and problems of graduates are made. Further information may be obtained from the Coordinator of Student Personnel Services, 203 Thach Hall.

## Field Services

*Wayne Teague, Coordinator*

Field Services constitute that phase of the work of the School of Education which is designed to make the programs and services of the School of Education available to individuals and groups off campus. Field Services enable the School of Education to combine its three major functions: instruction, research, and extension; and make them available to off-campus groups toward assisting in the continuous improvement of public education in the State and region. Several major categories of services are available. These follow with a brief statement of the purpose and nature of the services.

**Off-Campus Instruction.**—Off-Campus instruction is available through the Field Laboratory Program which enables teachers in service to complete a total of 16 quarter hours of residence credit toward a graduate degree. The program utilizes the local school setting as a laboratory in which graduate courses are provided as a framework for solving instructional problems related to various areas of study. The program may be used as a supplement to existing in-service programs or as a basis for developing such programs.

Short courses may also be offered on a non-credit basis for groups interested in specific areas of education and psychology. The courses may consist of a series of lectures or workshops and are available to groups of professional and non-professional personnel who may be interested in short courses focused on some specific aspect of their work.

**Educational Television.**—Resources and materials of the School of Education are made available to the people of the State through a series of telecasts from the Auburn Educational Television studio. Telecasts are planned and presented in cooperation with the Auburn University Educational Television Department through the facilities of the Alabama Educational Television Network. Telecasts are of two major types: (1) direct and enrichment teaching programs for elementary and secondary school students, and (2) programs designed to assist teachers in their professional career development programs.

Further information regarding Educational Television at Auburn University is contained on page 64 of this Bulletin. A schedule of courses and specific course study guides may be obtained by writing the Director, Educational Television, Auburn University.

**Lecture and Consultative Service.**—The staff of the School of Education is composed of persons who are skilled in general and specific areas of education. The Office of Field Services functions as a coordinating agency for making the services of these faculty members available for lecture and consultative services. These services may be used in connection with in-service education, school and community projects, teacher workshops and institutes, and community clubs and organizations.

**School Surveys.**—School systems desiring comprehensive school surveys or surveys in specific areas of education such as school plant utilization and construction, school finance, administrative organization, and curriculum and teaching programs, may secure services of this type from the School of Education. Surveys may be conducted as separate projects or in conjunction with the Field Laboratory Program described above.

**Research Services.**—School systems may wish to conduct research in such areas as the instructional program, administrative and supervisory patterns

and organization, school and community projects, the development and evaluation of testing programs, and the use of instructional materials and facilities. The assistance of the staff of the School of Education is available for these activities, either as separate endeavors or in conjunction with the instructional and survey services described above.

**Correspondence Study.**—Correspondence study provides undergraduate instruction for persons unable to attend college on a regular basis. Courses are available in the areas of English, education, economics, health, physical education and recreation, history, mathematics, psychology, and sociology. Other courses may be added as the demand warrants. Correspondence courses parallel those given on the campus and have been prepared to give the student the greatest possible mastery of course content and to secure for him the instructional and evaluative services of his instructor. All the courses carry college credit. For information concerning the Correspondence Study Program of Auburn University, see page 71 of this Catalog. For regulations governing the use of correspondence in programs of study at Auburn, see page 104.

### **Learning Resources Center**

*Marvin Dawson, Coordinator*  
*Clara Szilassy, Writer*  
*Sharon Hill, Artist*

The School of Education provides, through a Learning Resources Center housed in Thach Hall, an extensive collection of materials for teaching and learning. These resources complement the materials in the University Library. They are varied in nature, and range from selected printed publications to graphic productions. Included are such materials of instruction as transparencies for projection, record players, tape recorders, overhead projection equipment and supplies, television receiving sets, and printed references.

The Learning Resources Center is a service center created primarily to improve instruction through effective use of appropriate materials. Personnel is available to assist faculty and students in producing, selecting, and using these learning resources.

**Education Interpretation Service.**—A phase of the Learning Resources Center is the Education Interpretation Service. Devoted to better communication through the printed page, it aids public agencies and schools in improving their publications, publicity, and educational materials. It also provides readability analyses of textbooks, editorial services, and publication facilities.

### **In-Service Agricultural Education and Supervision**

*Thurston L. Faulkner, State Supervisor*  
*Ben P. Dilworth, Howard W. Green, Lewis L. Sellers, and*  
*Joseph A. White, Assistant Supervisors*  
*Homer N. Lewis, Livestock Specialist*  
*Byron F. Rawls, Executive Secretary FFA*

In cooperation with the State Department of Education, the School of Education maintains an in-service teacher education and supervisory division. This service extends to 345 departments of vocational agriculture in accredited high schools of the State and to more than 25 teachers of veterans.

## Vocational Rehabilitation Service

*Frank W. Jenkins and J. Hoyt Roberts, District Supervisors*

The State Department of Education in cooperation with Auburn University maintains the local Rehabilitation Service which provides vocational guidance, counseling, training and placement services to citizens who are handicapped. The Rehabilitation Service also makes available to its handicapped citizens such services as: surgical and/or medical care, hospitalization, therapeutic treatment and artificial appliances when these services are essential to training and/or employment and the individual is not financially able to secure them.

## Undergraduate Curricula For The Preparation Of Teachers

These materials set forth requirements and guides for the development of programs for students pursuing a teacher education curriculum. Requirements for the pre-professional program, the program of professional education, and the fields of teaching specialization are stated. Listed also are total credit requirements, recommended courses, and provisions for electives in the different preparation programs.

Students who intend to teach should register in the School of Education when they enroll at Auburn. However, students from other divisions of the University and from other colleges who decide to teach may transfer to the School of Education at a later time. Graduates from two-year curricula of approved colleges normally enter the junior year.

Early registration in the School of Education clarifies the student's plans and strengthens his preparation for teaching. He should plan his program in conference with his advisor by the beginning of his sophomore year.

### I. Pre-Professional Requirements

The pre-professional program as outlined here partially fulfills the liberal arts requirement for students preparing to enter a teacher preparation program leading to professional certification as a teacher in elementary and/or secondary schools. A major portion of the pre-professional requirement will be completed prior to admission to the teacher education program.

102-3-4 Orientation .....	3	Social Science	
EH 101-2 English Composition .....	10	Secondary Majors—Study in	
*EH 253-54 Literature in English .....	10	two or more fields selected	
MH 181 Fundamental Mathematics I or		from history, economics,	
approved mathematics elective .....	5	political science, sociology	
MS Military Training (Men) .....	6	and geography .....	20
PE Physical Education (Men) .....	6	Elementary Majors—Study in	
PE Physical Education (Women) .....	9	three or more fields selected	
MU 371 Intr. to Music (Elementary		from history, economics,	
majors only) .....	3	political science, sociology	
AT 342 Elem. School Art (Elementary		and geography .....	30
majors only) .....	5	Science	
SP 431 Prins. of Speech Correction		Physical .....	10
(Elementary majors only) .....	5	Biological .....	10
PG 213 Growth and Development of			
School Age Children .....	5		
PG 214 Educational Psychology .....	5		

\* Majors in health, physical education and recreation will take one course in speech instead of EH 254. Majors in agricultural education will take one course in speech and one course in journalism instead of EH 253-54.

### II. Professional Requirements

This phase of the teacher preparation program is designed to develop competence in the content of professional education. It adds depth of under-

standing and gives social meanings to the knowledge one possesses. It is concerned with the individual, the nature of society and the functions of education in society. Through the study of professional literature, observations, and actual experience in teaching, the student acquires knowledge regarding the history and philosophy of education, the administration and organization of schools, curriculum development, teaching and learning processes, learning resources, and the evaluation of teaching effectiveness.

### A. Foundations of Education

Study in this field of teacher preparation provides background information essential to effective participation in the teaching profession. Formal class-work includes an analysis of historical, philosophical, and sociological considerations upon which the educational enterprise is based. Pertinent concepts, principles, and understandings are applied to the operation of public school systems for the purpose of developing a sound basis for evaluating the professional tasks associated with the education program.

Laboratory requirements are met, in part, by making planned observations in public schools near the campus and by active involvement in the work of an elementary or secondary school through the Pre-Teaching Field Experience. This experience, requiring at least two weeks, involves the student in planning and evaluating learning experiences, counseling, participation in pre-school conferences and faculty study, school and community meetings, and actual teaching.

All students in the teacher preparation program will complete the following courses: FED 200 Foundations of Education, 4 hours; FED 300 Principles and Practices in Education, 4; and FED 490 Evaluation in Education, 3.

### B. Student Teaching 10 or 15 Quarter Hours

The Student Teaching Program is designed to provide students with a student teaching internship in an off-campus school situation. The experiences include personal and professional contacts with the different aspects of community life and making application of concepts, skills, and knowledge of classroom situations.

The program is organized on a quarter basis in which the regular student enrolls for 15 credit hours and devotes full time during the quarter to the experience. The program is divided into three phases: orientation, off-campus experience and evaluation. The student should have completed a large part of the work in both the major and minor areas of specialization prior to taking Student Teaching.

The Student Teaching Program for students with a major or minor in art; dramatic arts; health, physical education and recreation; industrial arts; music; speech and/or special education, including speech correction and mental retardation, requires experience in both elementary and secondary schools.

Students in either secondary or elementary education who complete a minor in school library science are required to devote a part of their student teaching to appropriate experiences in the school library.

Students who have had teaching experience or other related experiences may be permitted to satisfy the student teaching requirement through special student teaching programs which are offered in lieu of the regular Student Teaching Program. Such cases will be considered on an individual basis in terms of the student's previous experiences.



EED 425	Student Teaching in Elementary School	
IED 425	Student Teaching in Elementary and Secondary Schools	
PE 425	Student Teaching in Health and Physical Education in Elementary and Secondary Schools	
SED 425	Student Teaching in Secondary School	
VED 425	Student Teaching	
	(T) Industrial Arts in Elementary and Secondary Schools	
	(U) Agricultural Education	

### C. Teaching and Program

Study in this part of the teacher preparation program provides the student with knowledge, understanding, and skills associated with his field of teaching specialization. Specifically, these competencies are developed in relation to curriculum development, methodology, teaching and learning resources, and evaluation of teaching effectiveness. Each student in the teacher preparation program will complete the courses listed under the area of the school program in which he is preparing to teach.

#### 1. Elementary Education

EED 329	Creative and Recreational Expression	6
EED 370	Teaching Basic Skills	6
EED 371	Fundamentals of Reading	4
EED 421	Developing Understandings of the Natural and Social Environment	6

#### 2. Secondary Education

*SED 405	Teaching in Secondary School, or	SED 405	Teaching in Secondary School, or
IED 414	Teaching in Elementary and Secondary Schools	SED 410	Program in Secondary School
	(Major Field)		(Minor Field)
	3		3
			or
*SED 410	Program in Secondary School, or	IED, PE, or VED 414	Teaching in Elementary and Secondary Schools, and
IED 423	Program in Elementary and Secondary Schools	IED, PE, or VED 423	Program in Elementary and Secondary Schools
	(Major Field)		(Minor Field)
	3		6

\* Teaching and Program courses SED 407 and SED 412, are required in major for students in home economics education.

#### 3. Vocational, Technical and Practical Arts Education

##### a. Agricultural Education

VED 446	Teaching Agriculture	5
VED 456	Teaching Aids in Agricultural Education	4
VED 466	Teaching Out-of-School Groups	5

##### b. Industrial Arts Education

VED 346 Voc. and Pract. Arts Education	3	SED 405 Teaching in Secondary School, or SED 410 Program in Secondary School (Minor Field)	3
VED 414 Teaching in Elementary and Secondary Schools, and		or	
VED 423 Program in Elementary and Secondary Schools (Major Field)	6	IED or PE 414 Teaching in Elementary and Secondary Schools, and IED or PE 423 Programs in Elementary and Secondary Schools (Minor Field)	6
VED 485 Audio-Visual Materials	5		

#### 4. Health, Physical Education and Recreation

PE 414	Teaching in Elementary and Secondary School, and	SED 405	Teaching in Secondary School, or
PE 423	Program in Elementary and Secondary Schools	SED 410	Program in Secondary School
	(Major Field)		(Minor Field)
	6		3
			or
		IED or VED 414	Teaching in Elementary and Secondary Schools, and
		IED or VED 423	Program in Elementary and Secondary Schools
			(Minor Field)
			6

### III. Requirements for Major and Minor Fields of Specialization

Study in a major and/or minor field of specialization is intended to help students develop the academic competencies needed for entering the teaching profession with qualifications for teaching in one or more areas of the school program.

A student preparing to teach only at the secondary school level is required to complete a major and a minor field of specialization.

A student enrolled in either elementary or secondary education may prepare to teach in selected fields on a twelve-grade basis. These fields of specialization are art; dramatic arts; health, physical education and recreation; industrial arts; music; speech and/or special education, including speech correction and mental retardation; and school library science. Students in secondary education with a major and/or minor selected from these fields will qualify also for teaching in the elementary school in the major and/or minor field selected. Students with a major in elementary education, through the concentration of electives, may qualify for teaching in the secondary school in one of these fields by completing the elementary education curriculum and a subject-matter concentration of 27 to 30 hours in the field selected.

The secondary education student, and the student in elementary education interested in qualifying to teach in one area of the secondary school program, should study with care the respective fields for specialization with a view of selecting the most appropriate teaching field or fields. Factors of major importance in making such a decision are special interests, aptitudes, supply and demand of teachers, the relationship of one teaching field to another, plans for graduate study, and administrative practices in school systems relative to the assignment of teachers.

Requirements listed below represent minimum hours for a major and a minor in the respective fields of specialization. The number of hours listed for each field of specialization is exclusive of courses completed in pre-professional and professional education. The requirements also exclude the use of any course as partial fulfillment for both the major and the minor field of study.

Subject	Minor	Major
Agricultural Education .....		75
Art .....	35-40	45-60
Business Education .....		
General Business .....	35	64
Office Administration .....	35	64
Dramatic Arts .....	31-36	41-53
English .....	20	40
Health, Physical Education and Recreation .....	40	55
Industrial Arts Education .....	37	58
Mathematics .....	30	50
Modern Languages .....	30	40
Music .....	30	60
Composite Major-Minor .....		
Instrumental and Choral .....		90
Choral and Elementary School Music .....		90
School Library Service .....	28-30	
Science .....		
General Science .....	20	40
Biological Science .....	20	45
Physical Science .....	20	45
Social Science .....		
General Social Science .....	20	40
Composite Major-Minor .....		65
Economics .....	25	40
Geography .....	25	40
Sociology .....	25	40
History .....	25	40

Speech and/or Special Education, including Speech Correction and Mental Retardation .....	32	40-50
Vocational Home Economics .....		63

Students pursuing a preparation program for teaching in the secondary school only or for teaching in specific fields in both elementary and secondary school programs will complete the subject-matter requirements as listed under the field or fields in which the student is preparing to teach.

**AGRICULTURAL EDUCATION****Major: 75 Hours**

VED 405 The School Shop .....	5
VED 406 Farm and Home Construction .....	5
VED 407 Pract. Farm Elec. ....	5
AH 204 Animal Nutrition .....	5
AH 303 Livestock Production .....	5
AN 303 Farm Machinery .....	5
AS 401 Farm Management .....	5
AY 307 General Soils .....	5
AY 401 Forage Crops .....	5
DH 200 Funds. of Dairying .....	5
FY 313 Farm Forestry .....	5
HF 201 Orchard Management .....	5
HF 221 Landscape Gardening .....	5
HF 308 Vegetable Gardening .....	5
PH 301 General Poultry .....	5
	75

**ART****Minor: 35 or 40 Hours**

AT 105 Drawing I .....	5
AT 106 Drawing II .....	5
AT 181 Design Fundamentals I .....	5
AT 182 Design Fundamentals II .....	5
AT 222 Painting I .....	5
AT 338 Art History I .....	5
AT 342 Elementary School Art .....	5
	35

AT Approved Elective .....	5
	40

**Major: 45 or 60 Hours**

AT 322 Minor Requirements .....	35
AT Painting III .....	5
AT Approved Elective .....	5
	45
AT Approved Electives .....	15
	60

**\*BUSINESS EDUCATION****A. General Business****Minor: 35 Hours**

EC 200 General Economics .....	5
EC 211-212 Introductory Accounting .....	10
EC 300 Business Management .....	5
EC 341 Business Law .....	5
SA 111 Business Typewriting or equivalent .....	5
SA 302 Office Machines .....	5
	35

\* Non-business education majors may take minor A or B. Business education majors will complete program requirements in A or B.

**Major: 64 Hours**

Minor Requirements .....	35
EC 311-312 Intermediate Accounting .....	10
EC 331 Principles of Marketing .....	5
EC 404 Office Management .....	5
EH 345 Business and Professional Writing .....	5
IE 314 Electronic Data Processing Machines .....	3
SA 200 Filing .....	1
	64

**B. Office Administration****Minor: 35 Hours**

EC 200 General Economics .....	5
EC 211-212 Introductory Accounting .....	10
SA 101-102-203 or 102-203-204 Secretarial Science .....	15
SA 302 Office Machines .....	5
	35

**Major: 64 Hours**

Minor Requirements .....	35
EC 300 Business Management .....	5
EC 341 Business Law .....	5
IE 314 Electronic Data Processing Machine .....	3
SA 200 Filing .....	1
SA 204 Secretarial Science or SA 300 Secretarial Procedures .....	5
SA 303 Advanced Office Machines .....	5
Approved Elective .....	5
	64

**DRAMATIC ARTS****Minor: 31 or 36 Hours**

DR 101 Dramatic Production .....	5
DR 102 Acting & Stage Techniques .....	5
DR 201 Directing .....	5
DR 202 Acting & Makeup .....	5
DR 203 Stage Mechanics .....	5
DR 313 Drama Appreciation I .....	3
DR 314 Drama Appreciation II .....	3
	31
DR Approved Elective .....	5
	36

**Major: 41 or 53 Hours**

Minor Requirements .....	31
DR 204 Dramatic Theory .....	5
DR 413 20th Century Theatre .....	5
	41

**Major Requirements**

(41 less DR 313-3) .....	38
DR 310 World Theatre .....	5
DR 311 World Theatre .....	5
DR 312 World Theatre .....	5
	53

**ENGLISH****Minor: 20 Hours**

EH 390 Advanced Composition .....	5
EH 401 Advanced Grammar or	
EH 441 Introduction to the Study of	
Language .....	5
Approved Electives 300-400	
English Courses .....	10
	20

**Major: 40 Hours**

Minor Requirements .....	20
EH 357 or 358 Survey of American	
Literature .....	5
EH 451 or 452 Shakespeare .....	5
Approved Electives 300-400	
English Courses .....	10
	40

**HEALTH, PHYSICAL EDUCATION,  
AND RECREATION****Minor: 40 Hours**

Theory & Techniques (Choice of 3 courses)	
PE 106, 133, 167, 190, 191, 221, 278 .....	6
PE 201 Introduction to H. & PE .....	5
PE 212 Elementary School Activities .....	3
*PE 214 Kinesiology .....	5
PE 316 Tests and Measurements .....	3
PE 317 School Health & Health Educ. ....	5
PE 318 Principles of Recreation .....	5
PE 401 Administration .....	5
PE 202, 206, 303, 304 (Men) .....	
PE 311, 312, 313, 314 (Women) .....	3
	40

**Major: 55 Hours**

Minor Requirements .....	40
One minor area composed of courses selected from A, B, or C .....	15
	55

**A. Health Education**

HE 372 Nutrition & Health .....	3
PE 409 Advanced Hygiene .....	5
PE 429 Prob. of Health Education and Observation of School Children .....	5
PY 300 Public Health .....	5
VM 311 General Bacteriology .....	5

**B. Physical Education**

Theory & Techniques (Choice of 2 courses)	
PE 106, 133, 167, 190, 191, 221, 278 .....	4
PE 404 Athletic Injuries, First Aid and Safety .....	5
*PE 405 Physiology of Muscular Activity ..	3
PE 416 Adapted Phys. Educ. ....	3
PE 202, 206, 303, 304 (Men) .....	
PE 311, 312, 313, 314 (Women) .....	6

**C. Recreation**

PE 301 Recreational Leadership .....	5
PE 319 Outdoor Recreation .....	5
HE 345 Creative Crafts .....	3
SY 405 Urban Sociology .....	5

\* Pr.—VM 220 and 221, Physics 204.

\*\* Required in Option B.

**INDUSTRIAL ARTS EDUCATION****Minor: 37 Hours**

AT 216 Materials and Processes .....	5
EG 102 Engineering Drawing .....	2

EG 104 Descriptive Geometry .....	2
IL 102 Welding Science and Applic. ....	1
IL 104 Sheet Metal Design .....	1
IL 302 Manufacturing Processes .....	3
IL 307 General Metals .....	5
IL 402 Adv. Woodworking .....	5
IL 405 Probs. in Welding Engr. ....	5
VED 246 Instructional Drawing .....	3
VED 405 The School Shop .....	5

37

**Major: 58 Hours**

Minor Requirements .....	36
AT 181 Design Fundamentals .....	5
IL 101 Woodworking .....	1
IL 103 Machine Tools .....	1
IL 308 Gages & Measurements .....	5
IE 438 Safety Engr. ....	5
VED 407 Pract. Farm Electricity .....	5

58

**MATHEMATICS****\*Minor: 30 Hours**

MH 111-112 Intr. College Math. ....	10
MH 161 Analytic Geom. & Calculus I .....	5
MH 262 Analytic Geom. & Calculus II .....	5
MH 331 Higher Algebra .....	5
MH 481 College Geometry .....	5

30

**\*Major: 50 Hours**

Minor Requirements .....	30
MH 263 Analytic Geom. & Calculus .....	5
MH 340 Topology .....	5
MH 351 Finite Mathematics .....	5
Approved Elective .....	5

50

\* No credit allowed in MH 181 in major or minor.

**MODERN LANGUAGES****A. Spanish****Minor: 30 Hours**

FL 131 Elementary Spanish .....	5
FL 132 Elementary Spanish .....	5
FL 231 Intermediate Spanish .....	5
FL 232 Intermediate Spanish .....	5
FL 331 Advanced Spanish .....	5
FL 332 Advanced Spanish .....	5

30

**Major: 40 Hours**

Minor Requirements .....	30
FL 431 History of Spanish Literature .....	5
FL 432 History of Spanish Languages .....	5

40

**B. German****Minor: 30 Hours**

FL 151 Elementary German .....	5
FL 152 Elementary German .....	5
FL 251 Intermediate German .....	5
FL 252 Intermediate German .....	5
FL 351 Advanced German .....	5
FL 352 Advanced German .....	5

30

**Major: 40 Hours**

Minor Requirements .....	30
FL 451 History of German Literature .....	5
FL 452 History of German Language .....	5

40

**C. French****Minor: 30 Hours**

FL 121 Elementary French .....	5
FL 122 Elementary French .....	5
FL 221 Intermediate French .....	5
FL 222 Intermediate French .....	5
FL 321 Advanced French .....	5
FL 322 Advanced French .....	5
	30

**Major: 40 Hours**

Minor Requirements .....	30
FL 421 History of French Literature .....	5
FL 422 History of French Language .....	5
	40

**MUSIC****Minor: 30 Hours**

MU 131, 132, 133 Music Theory .....	9
MU 352, 353 Music History II & III .....	6
MU 361 Conducting I .....	3
Applied (one area; if piano, organ will be secondary area) .....	6
SED 494 Organization of Instrumental Music .....	3
Piano (Private applied or class, to be assigned by staff committee) .....	3
	30

**Major: 60 Hours**

Minor Requirements .....	30
MU 231, 232, 233 Music Theory .....	9
MU 351 Music History I .....	3
Applied, Major Area .....	5
Band, Orchestra, Choir or Mixed Chorus .....	11
MU 362, 363 Conducting II & III .....	2
	60

**Composite Major-Minor: 90 Hours**

Major Requirements .....	60
Completion of A or B .....	30
	90

**A. Instrumental and Choral**

MU 110 String Instruments Class .....	1
MU 113, 114, 115 Brass Instruments Class .....	3
MU 116, 117, 118 Woodwind Instruments Class .....	3
MU 119 Percussion Instruments Class .....	1
MU 377 Music Arranging .....	3
MU 409 Marching Band Techniques .....	3
MU 431, 432 Musical Analysis .....	6
MU 454 Instrumental Literature .....	3
SED 495 Organization of Choral Music .....	3
Electives (Woodwind, brass, string, vocal ensemble) .....	4
	30

**B. Choral and Elementary School Music**

EED 497 Organization of Elementary Music .....	3
MU 110 String Instruments Class .....	1
MU 334 Counterpoint I .....	3
MU 431, 432 Music Analysis .....	6
MU 434 Composition .....	3
Applied Piano .....	3
MU 452 Vocal Literature .....	3
MU 453 Choral Literature .....	3
Music Electives .....	5
	30

**SCHOOL LIBRARY SCIENCE****Minor: 28-30 Hours**

IED 472 Books and Related Materials for Children .....	4
IED 482 Organization and Administration of School Libraries .....	5
IED 484 Class. & Cataloging of School Library Materials .....	5
IED 486 Books and Related Materials for Young People .....	5
IED 487 Practicum in School Library Services .....	4-6
VED 485 Audio-Visual Materials .....	5
	28-30

**SCIENCE****\*Minor: 20 Hours**

Approved courses in science .....	20
* Students who select science as a minor and who major in another area must com- plete CH 103, 103L and 104, 104L and PS 204 as a part of the minor.	

**Major: 40 or 45 Hours**

Minor Requirements .....	20
Completion of one area composed of courses selected from A, B, or C .....	20-25
	40-45

**A. General Science**

PS 205-206 General Physics .....	10
SED 473 General Science for Teachers .....	5
Elective .....	5
	20

**B. Biological Science**

ZY 214 Vertebrate Physiology & Anatomy .....	5
Approved Electives in Biological Science 300 and 400 courses .....	20
	25

**C. Physical Science**

CH 206 Quantitative Analysis .....	5
CH 207 Organic Chemistry .....	5
PS 205-6 General Physics .....	10
Approved Elective .....	5
	25

**SOCIAL SCIENCE****A. General Social Science****\*Minor: 20 Hours**

HY 206 U.S. Government .....	5
HY 207-8 World History .....	10
Approved Electives from 300- 400 courses in History, Sociology, Geography, or Economics .....	5
	20

**Major: 40 Hours**

Minor Requirements .....	20
HY 404 Recent U.S. History .....	5
HY 452 History of Latin America or HY 451 The Far East .....	5
Approved Electives from 300-400 courses .....	10
	40

**B. Composite Major-Minor: 65 Hours**

Minor Requirements in 1, 2, 3, or 4 .....	40
Minor Requirements, exclusive of major area selected from 1, 2, 3, or 4 .....	25
	65

\* No other minor is available to non-social science majors.

**1. Economics****Minor: 25 Hours**

EC 201-2 Principles and Problems of Economics .....	10
EC 451 Intermediate Economic Theory .....	5
EC 452 Comparative Economic Systems .....	5
Approved Electives .....	5
	<b>25</b>

**Major: 40 Hours**

Minor Requirements .....	25
Fifteen hours selected from	
EC 211 Introductory Accounting .....	5
EC 350 Labor Problems .....	5
EC 357 Economic History of Europe or	
EC 358 Economic History of the United States .....	5
EC 360 Money and Banking .....	5
EC 402 American Industries .....	5
EC 445 Industrial Relations .....	5
EC 460 Public Finance .....	5
	<b>40</b>

**2. Geography****Minor: 25 Hours**

GY 102 Principles of Geography .....	5
GY 103 Economic Geography .....	5
GY 405 Cultural Geography of the World .....	5
Approved Electives .....	10
	<b>25</b>

**Major: 40 Hours**

Minor Requirements .....	25
Fifteen hours selected from	
GY 303 Geography of the Soviet Union .....	5
GY 304 Geography of South America .....	5
GY 305 Geography of North America .....	5
GY 306 Geography of Europe .....	5
GY 307 Geography of Asia .....	5
GY 308 Geography of Africa .....	5
	<b>40</b>

**3. Sociology****Minor: 25 Hours**

SY 201 Introduction to Sociology .....	5
SY 203 Cultural Anthropology .....	5
Approved Electives .....	15
	<b>25</b>

**Major: 40 Hours**

Minor Requirements .....	25
SY 202 Social Problems .....	5
SY 304 Minority Groups .....	5
SY 308 Juvenile Delinquency .....	5
	<b>40</b>

**4. History****Minor: 25 Hours**

HY 107 United States History .....	5
HY 207-8 World History .....	10
Approved Electives .....	10
	<b>25</b>

**Major: 40 Hours**

Minor Requirements .....	25
Fifteen hours selected from	
HY 206 American Government .....	5

HY 313 Recent European History .....	5
HY 451 The Far East .....	5
HY 452 History of Latin America .....	5
	<b>40</b>

**SPEECH AND/OR SPECIAL EDUCATION\*****A. Speech****Minor: 32 Hours**

SED 201 (P) Communication Problems .....	2
SP 229 Voice and Diction .....	5
SP 231 Essentials of Public Speaking .....	5
SP 241 Survey of the Bases of Speech .....	5
SP 273 Group Discussion .....	5
Minors select 10 hours from the following approved electives below .....	10
	<b>32</b>

**Major: 40 or 50 Hours\*\*****Minor Requirements .....**

Majors select 8-18** hours from the following approved electives.	
SP 235 Interpretative Reading .....	5
SP 331 Advanced Public Speaking .....	5
SP 337 Fundamentals of Radio and Television Broadcasting .....	5
SP 431 Principles of Speech Correction .....	5
SP 442 Persuasive Speaking .....	5
Approved Elective .....	3
	<b>40-50</b>

**B. Speech Correction\*\*\*****Minor: 32 Hours**

SED 201 (P) Communication Problems .....	2
SP 229 Voice and Diction .....	5
SP 231 Essentials of Public Speaking .....	5
SP 301 Phonetics .....	5
SP 321 The Speech Mechanism .....	5
SP 411 Introduction to Problems in Hearing .....	5
SP 431 Principles of Speech Correction .....	5
	<b>32</b>

**Major: 40 or 50 Hours\*\*****Minor Requirements .....**

Majors select 8-18** hours from the following approved electives	
IED 476 The Exceptional Child .....	5
PE 409 Advanced Hygiene or	
PG 434 Mental Hygiene .....	5
SP 432 Advanced Speech Correction .....	5
Approved Elective .....	3
	<b>40-50</b>

**C. Mental Retardation****Minor: 32 Hours**

IED 476 The Exceptional Child .....	5
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\* Includes provisions for students to develop major and/or minor areas of concentration in speech, speech correction, or mental retardation.

\*\* Requirement of 50 hours for concentration in one area only—when program of study includes two or more areas of concentration a minimum of 40 hours must be completed in one area.

\*\*\* Additional work required; 200 clock hours in an approved Speech and Hearing Clinic.



IED 478 Nature of Mental Retardation	5
EED 370 Teaching Basic Skills	8
PG 434 Mental Hygiene	5
SED 201 (O or P) Exceptional Children or Communication Problems	2
9 hours approved electives from following:	
EED 371 Fundamentals of Reading	4
PE 429 Problems of Health Education & Health Observation of School Children	5
PE 416 Adaptive Physical Education	5
SP 431 Principles of Speech Correction	5
	32

#### Major: 40 or 50 Hours\*\*

Minor Requirements	32
A. Select 2 courses from following (minimum of 8 hours)	
AT 342 Elementary School Art	5
HE 345 Creative Crafts	2
IED 472 Books and Related Materials for Children	4
IL 415 Shopwork for Elementary Teachers	5
MU 371 Introduction to Music	3

B. Select 10 hours from following:	
EED 371 Fundamentals of Reading	4
SP 411 Introduction to Problems in Hearing	5
SP 432 Advanced Speech Correction or Approved Electives	5
	40-50

#### VOCATIONAL HOME ECONOMICS

##### Major: 63 Hours

HE 102 Basic Foods and Nutrition	5
HE 105 Fundamentals of Clothing	5
HE 202 Meal Management	5
HE 205 Clothing for the Family	5
HE 207 (3)-407 (5) Child Development	8
HE 303 The House I or	
HE 343 Contemporary Materials and Finishes	5
HE 305 Tailoring or	
HE 355 Consumer Textiles	3
HE 235 Home Equipment or	
HE 313 Home Furnishings	5
HE 323 Home Management	5
HE 353 Community and Family Health	3
HE 372 Nutrition and Health	3
HE 443 Home Management Residence	5
HE 457 Family Relationships	5
Approved electives in Home Economics	1
	63

### IV. Guides for the Completion of Curricular Requirements for the Respective Preparation Programs in Teacher Education

The following curricular outlines set forth requirements and suggestions for preparing teachers to teach in the elementary school, the respective fields of the secondary school, and elementary-secondary in art; dramatic arts; health, physical education and recreation; industrial arts; music; speech and/or special education, including speech correction and mental retardation; and school library science. Provisions are made for meeting the requirements in the pre-professional program, the program in professional education, academic majors and minors, and electives. Specified also are the total number of hours required for the completion of each curriculum and the number of hours assigned to each quarter. In general, courses listed should be taken in sequence.

The Dean reserves the privilege of making substitutions in course requirements, provided such modifications do not conflict with state requirements or university regulations as to degrees in Education.

#### A. Elementary Education (EED)

FRESHMAN YEAR		
FIRST QUARTER	SECOND QUARTER	THIRD QUARTER
EED 102 Orientation .....1	EED 103 Orientation .....1	EED 104 Orientation .....1
EH 101 English Comp. ....5	EH 102 English Comp. ....5	BI Biological Science .....5
HY 107 United States Hist. 5	GY 102 Prins. of Geog. ....5	PG 213 Growth & Dev. of School-Age Child. ....5
PE 110 Hygiene .....3	PE Physical Education .....1	PE Physical Education .....1
PE Physical Education .....1	*Approved Elective .....1	*Approved Elective .....5
*Approved Elective .....2		
SOPHOMORE YEAR		
EH 253 Lit. in English .....5	EH 254 Lit. in English .....5	HY 208 World History .....5
MH 181 Fund. Math. I .....5	FED 200 Foundations of Ed. 4	MU 371 Intr. to Music .....3
PG 214 Educ. Psychology .....5	HY 207 World History .....5	SY 201 Intr. to Sociology .....5
PE Physical Education .....1	PE Physical Education .....1	PE Physical Education .....1
*Approved Elective .....1	*Approved Elective .....2	*Approved Elective .....4

\* Male students will schedule Military Training each quarter in the freshman and sophomore years.

## JUNIOR YEAR

## FIRST QUARTER

AT 342	Elem. School Art	.5
FED 300	Prins. & Practices in Education	.4
HY 206	U.S. Gov't	.5
	Approved Elective	.4

## SECOND QUARTER

EED 329	Creative & Rec. Expression	.6
EED 370	Teaching Basic Skills	.6
	Physical Science	.5
	Approved Elective	.1

## THIRD QUARTER

EED 371	Fund. of Reading	.4
	Physical Science	.5
SP 431	Prins. of Speech Correction	.5
	Approved Elective	.5

## SENIOR YEAR

EED 421	Dev. Understand. of the Natural & Social Environment	.6
HY 481	Hist. of Alabama	.5
	English Elective	.3
	Approved Elective	.4

EED 425	Student Teaching	15
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FED 490	Evaluation in Education	.3
	Approved Electives	15

Students may carefully plan the use of electives and develop an area of concentration of 27 to 30 hours in one of the subject-matter fields included in twelve-grade programs. These areas are art; dramatic arts; health, physical education, and recreation; industrial arts; music, speech and/or special education, including speech correction and mental retardation; and school library science.

Total—210 quarter hours

## °B. Secondary Education (SED)

## FRESHMAN YEAR

## FIRST QUARTER

SED 102	Orientation: Personal & Prof.	.1
EH 101	English Comp.	.5
HY 101	History of the United States	.5
HY 107	United States Hist., or	.5
GY 102	Principles of Geog.	.5
	Major or Minor	.5
PE	Physical Education	.1
PE 111	Hygiene (women), or	
MS	Military Training (men)	.1
		18

## SECOND QUARTER

SED 103	Orientation: Personal & Prof.	.1
EH 102	English Comp.	.5
HY 102	History of the United States, or	.5
GY 102	Prins. of Geog.	.5
	Major or Minor	.5
PE	Physical Education	.1
PE 112	Hygiene (women), or	
MS	Military Training (men)	.1
		18

## THIRD QUARTER

SED 104	Orientation: Personal & Prof.	.1
BY 101	General Botany,	
ZY 101	General Zoology, (or approved biological science)	.5
PG 213	Growth & Dev. of School-Age Child.	.5
	Major or Minor	.5
PE	Physical Education	.1
PE 113	Hygiene (women), or	
MS	Military Training (men)	.1
		18

## SOPHOMORE YEAR

PG 214	Educational Psyc.	.5
BY 102	General Botany,	
ZY 102	General Zoology, (or approved biological science)	.5
	Major or Minor	.5
PE	Physical Education	.1
MS	Military Training (men), or Elective (women)	.1
		17

FED 220	Foundations	.4
MH 181	Fundamentals of Math. I (or approved math. elective)	.5
	Major, Minor or approved electives	.7
PE	Physical Education	.1
MS	Military Training (men), or Elective (women)	.1
		18

EH 253	English Literature	.5
EC 200	Gen. Economics,	
HY 207	World History, or	
SY 201	Intr. to Sociology	.5
	Major or Minor	.5
PE	Physical Education	.1
MS	Military Training (men) or Elective (women)	.1
		17

## JUNIOR YEAR

EH 254	English Literature (or approved sub- stitute)	.5
FED 300	Prins. & Practices in Education	.4
	Major-Minor (or approved electives)	.6
	Teaching, Program (Major-Minor) (or approved elective)	.5
		20

EC 200	Gen. Economics,	
HY 208	World History, or	
SY 201	Intr. to Sociology	.5
	Teaching, Program (Major-Minor) (or approved elective)	.3
	Major-Minor (or approved electives)	10
		18

	Teaching, Program (Major-Minor) (or approved elective)	.3
PS 204	Survey Course in Physics, (or approved physical science)	.5
	Major-Minor (or approved electives)	10
		18

\* The above curriculum represents the framework for a complete program in secondary education. The department offers a complete program in a number of teaching fields. These include the major and minor in art, business education, dramatic arts, English, vocational home economics, languages, mathematics, music, science, social science, speech and/or special education including speech correction and mental retardation, and the minor in school library science.

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
Teaching, Program (Major-Minor) (or approved elective) ..3		Student Teaching ..15		FED 490 Evaluation in Education .....	3
Major-Minor, (or approved electives) 15				SED 473 Gen. Science for Teachers (or approved physical science) .....	5
				Major-Minor (or approved electives) 12	
	18		15		20

Total—215 quarter hours

## C. Health, Physical Education and Recreation (PE)

FRESHMAN YEAR		FRESHMAN YEAR		FRESHMAN YEAR	
FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
PE 102 Orientation .....	1	PE 103 Orientation .....	1	PE 104 Orientation .....	1
EH 101 English Comp. ....	5	EH 102 English Comp. ....	5	PE 212 Elementary School Activities .....	3
HY 101 or 107 U.S. History	5	PE 201 Intro. to Phys. Ed. or		PG 213 Growth & Development .....	5
GY 102 Principles of Geography or		GY 102 Principles of Geography .....	5	VM 221 Anatomy & Physiology .....	5
PE 201 Intro. to Phys. Ed. 5		VM 220 Anatomy & Physiology .....	5	PE 110 Hygiene (Women) Elective (Men) .....	3
PE Physical Education ..1		PE Physical Education ..1		PE Physical Education ..1	
MS Military Training ....1		MS Military Training ....1		MS Military Training ..1	
	18		18		19

## SOPHOMORE YEAR

SOPHOMORE YEAR		SOPHOMORE YEAR		SOPHOMORE YEAR	
FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
EH 253 English Literature or		EH 253 English Lit. ....	5	EC 200 Gen. Economics ....	5
SP 231 Speech .....	5	MH 181 Fundamentals of Math. ....	5	FED 200 Foundations of Education .....	4
PG 214 Educational Psychology .....	5	SP 231 Speech .....	5	PE 214 Kinesiology .....	5
PS 204 Physics .....	5	PE Theory & Technique .....	2	PE Theory & Technique .....	2
PE Theory & Technique .....	2	PE Physical Education ..1		PE Physical Education ..1	
PE Physical Education ..1		MS Military Training ..1		MS Military Training ..1	
MS Military Training ....1					
	19		19		18

## JUNIOR YEAR

JUNIOR YEAR		JUNIOR YEAR		JUNIOR YEAR	
FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
FED 300 Principles .....	4	PE 316 Tests & Measurements .....	3	PE 317 School Health & Health Educ. ....	5
PE Option A, B, or C ..5		PE 414 Teaching (Major) ..3		PE 423 Program (Major) ..3	
PE Theory & Technique .....	2	PE Theory & Technique .....	2	SY 201 Sociology .....	5
PE 318 Principles of Recreation .....	5	PE 202, 206, 303, 304 (M) ..3		PE Approved Elective ..1	
		PE 311, 312, 313, 314 (W) 3			
		Approved Elective ..5			
	16		16		19

## SENIOR YEAR

SENIOR YEAR		SENIOR YEAR		SENIOR YEAR	
FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
Teaching or Program (Minor) ..3		FED 490 Evaluation .....	3	PE 425 Student Teaching ..15	
PE Option A, B, or C ..5		PE Option A, B, or C 5			
PE 401 Organization & Administration .....	5	414 or 423 Program or Teaching (Minor) or Approved Elective ..3			
Approved Elective ..5		Approved Electives 9			
	18		20		15

Total—215 quarter hours

## D. Vocational, Technical and Practical Arts (VED)

## 1. Agricultural Education

FRESHMAN YEAR		
FIRST QUARTER	SECOND QUARTER	THIRD QUARTER
HY 107 U.S. History .....5	BY 101 General Botany .....5	CH 104 General Chemistry .4
MH 107 College Algebra .....5	CH 103 General Chemistry .4	CH 104L Gen. Chem. Lab. .1
ZY 101 General Zoology .....5	CH 103L Gen. Chem. Lab. .1	EH 102 English Comp. ....5
VED 102 Orientation .....1	EH 101 English Comp. ....5	HF 201 Orchard Mgt. ....5
MS Military Training .....1	VED 103 Orientation .....1	VED 104 Orientation .....1
PE Physical Education .1	MS Military Training .....1	MS Military Training .....1
	PE Physical Education .1	PE Physical Education .1
	18	18
SOPHOMORE YEAR		
AS 202 Agr. Economics .....5	AH 204 Animal Nutrition .....5	AS 361 Rural Sociology .....5
HF 221 Landscape Gard'ng 5	FED 200 Foundations	EC 340 Personal Finance ....3
PG 213 Growth & Dev. of	of Ed. ....4	PG 214 Educational Psyc. .5
School-Age Child. .5	PS 204 Survey of Physics .5	SP 231 Essen. Public Spkg. 5
MS Military Training .....1	VED 246 Instructional	MS Military Training .....1
PE Physical Education .1	Drawing .....3	PE Physical Education .1
	MS Military Training .....1	
	PE Physical Education .1	
	19	20
JUNIOR YEAR		
AN 303 Farm Machinery .....5	AH 303 Livestock Prod. ....5	DH 200 Funds. of Dairying .5
FY 313 Farm Forestry .....5	FED 300 Prins. & Practices	HF 308 Veg. Gardening .....5
PH 301 General Poultry .....5	in Education .....4	VED 446 Teach. Agri. ....5
VED 405 The School Shop 5	JM 315 Ag. Journalism .....3	VED 456 Teaching Mat'ls.
	VED 406 Farm & Home	in Ag. Ed. ....3
	Construction .....5	
	Approved Elective .2	
	19	18
SENIOR YEAR		
AN 301 Drain. & Terracing 5	VED 425U Student Teaching	AY 401 Forage Crops .....5
AS 401 Farm Management .5	in Agr. Education 15	FED 490 Eval. in Education 3
AY 307 General Soils .....5		VED 407 Prac. Farm Elec. .5
VED 466 Teaching Out-of		ZY 402 Econ. Entomology .5
School Groups .....5		
	15	18

Total—220 quarter hours

## 2. Industrial Arts Education

FRESHMAN YEAR		
FIRST QUARTER	SECOND QUARTER	THIRD QUARTER
HY 107 American History .....5	BY 101 General Botany .....5	CH 104 General Chemistry .4
MH 107 College Algebra .....5	CH 103 General Chemistry .4	CH 104L Gen. Chem. Lab. .1
VED 102 Orientation .....1	CH 103L Gen. Chem. Lab. .1	EH 102 English Comp. ....5
ZY 101 General Zoology .....5	EH 101 English Comp. ....5	GY 102 Prins. of Geography 5
MS Military Training .....1	VED 103 Orientation .....1	VED 104 Orientation .....1
PE Physical Education .1	MS Military Training .....1	MS Military Training .....1
	PE Physical Education .1	PE Physical Education .1
	18	18
SOPHOMORE YEAR		
EC 200 General Economics .5	EG 102 Engr. Drawing .....2	PG 214 Ed. Psychology .....5
PG 213 Growth & Dev. of	EG 104 Desc. Geometry .....2	SP 231 Essentials of Pub.
School-Age Child. .5	FED 200 Foundations .....4	Speaking .....5
IL 101 Woodworking .....1	IL 104 Sheet Metal Design 1	SY 201 Intro. Sociology .....5
MS Military Training .....1	PS 204 Survey of Physics .5	VED 246 Inst. Drawing .....3
PE Physical Education .1	MS Military Training .....1	MS Military Training .....1
Elective .....5	PE Physical Education .1	PE Physical Education .1
	Elective .....3	
	19	20

## JUNIOR YEAR

FIRST QUARTER	SECOND QUARTER	THIRD QUARTER
AT 216 Materials and Processes .....5	EH 304 Technical Writing .....3	AT 181 Design Funds. ....5
IL 302 Mfg. Processes .....3	FED 300 Prin. & Practices in Education .....4	IL 307 General Metals .....5
IL 308 Gages & Measurements .....5	IM 307 Safety Engr. ....5	IL 402 Adv. Woodworking 5
VED 405 The School Shop ..5	VED 346 Voc. & Practical Arts Education .....3	IL 102 Welding Science & Application .....1
	VED 414 Teaching (Major) 3	IL 103 Machine Tools .....1
		Teaching or Program (Minor) ....3
18	18	20

## SENIOR YEAR

VED 423 Program (Major) ..3	VED 425T Student Teaching in Industrial Arts ..15	FED 490 Evaluation in Education .....3
VED 485 Audio-Visual Mtl. 5		IL 405 Prob. in Welding Engr'g. ....5
Elective (Minor Method) .....5		VED 407 Pract. Farm Electricity .....5
414 or 423 Teaching or Program (Minor) or approved Elective ....3		Electives .....5
Electives .....4		
20	15	18

Total—220 quarter hours

For each curriculum described in the preceding outlines, provisions have been made for meeting the needs of advanced ROTC students.

## Department of Psychology (PG)

The curriculum in Psychology requires completion of 40 quarter hours of courses in psychology exclusive of PG 101, Orientation, a minor of 25 or 30 quarter hours, 75 hours of general education, 15 quarter hours of French, German, Spanish, or Russian, 10 hours of technical requirements (College Algebra and Elementary Mathematical Statistics), and ROTC, hygiene, and physical education, a total of 210 quarter hours. Not more than 55 hours in psychology is allowed. General Psychology (PG 211), Psychology of Personality (PG 325), Psychometric Methods (PG 340), Advanced Psychology (PG 410), Experimental Psychology (PG 420), and Tests and Measurements (PG 455) are required courses.

The 75 hours of general education include 10 hours of English Composition plus 10 additional hours in literature and/or composition, 20 hours of social studies including at least one course in Economic Theory and History, one course in Sociology, and one course in History, 25 hours in the biological and physical sciences including Human Physiology and physics or chemistry, and 10 hours of Philosophy from among PA 307, 320, 325, 410, 420, 430, 440.

A minor is defined as 25 hours beyond the requirements in general education and the introductory course or courses in a field, where such exist. Minors may be selected from Chemistry, Economics (including Personnel Management), Industrial Management, Mathematics, Physics, Sociology, Speech (with emphasis on speech pathology and correction), Zoology, and others as approved by the Department Chairman.

Areas of concentration require 25 or 30 hours and include Anatomy and Physiology, Biological Sciences, Child Care and Development, Fine Arts (including Art, Music, Drama), Foreign Language, Industrial Personnel, the Social Sciences, and others as approved by the Department Chairman. Lists of suggested courses to include in minors and areas of concentration are available from advisors and in the Department Office.

## Curriculum in Psychology (PG)

## FRESHMAN YEAR

## FIRST QUARTER

EH 101	English Comp. ....	5
PG 101	Orientation .....	5
	Sci. Requirement .....	5
*MS	Military Training ....	1
PE	Physical Education ..	1
		17

## SECOND QUARTER

EH 102	English Comp. ....	5
HY	Hist. Requirement ..	5
	Sci. Requirement .....	5
*MS	Military Training ....	1
PE	Physical Education ..	1
		17

## THIRD QUARTER

CH or PS	Chem. or Physics Requirement .....	5
MH 107	College Algebra .....	5
	Social Studies Requirement .....	5
*MS	Military Training ....	1
PE	Physical Education ..	1
		17

## SOPHOMORE YEAR

EH	Eng. Requirement ..	5
PG 211	General Psychology ..	5
SY	Soc. Requirement ..	5
*MS	Military Training ....	1
PE	Physical Education ..	1
		17

EC	Eco. Requirement ....	5
EH	Eng. Requirement ..	5
	Sci. Requirement .....	5
*MS	Military Training ....	1
PE	Physical Education ..	1
		17

MH 127	Elem. Math. Statistics .....	5
VM 210	Human Physiology ..	5
	Minor .....	5
*MS	Military Training ....	1
PE	Physical Education ..	1
		17

## JUNIOR YEAR

FL	Foreign Language ..	5
PA	Phil. Requirement ..	5
PG 325	Psyc. of Personality ..	5
	**Elective .....	3
		18

FL	Foreign Language ..	5
PA	Phil. Requirement ..	5
PG 340	Psychometric Meth. ..	5
	**Elective .....	3
		18

FL	Foreign Language ..	5
PG 410	Adv. Psychology .....	5
	Minor .....	5
	**Elective .....	3
		18

## SENIOR YEAR

PG 420	Experimental Psyc. ..	5
PG 455	Tests and Measurements .....	5
	**Minor or Electives ..	8
		18

PG	Elective .....	5
	Minor .....	5
	**Minor or Electives ..	8
		18

PG	Elective .....	5
	Minor .....	5
	**Electives .....	8
		18

Total—210 quarter hours

\* Women students will substitute PE 111, 112, 113, Hygiene, in freshman year and electives in sophomore year.

\*\* Students taking Advanced ROTC will schedule these courses within the elective hours.



# School of Engineering

FRED H. PUMPHREY, *Dean*

\*KARL BRENKERT, JR., *Assistant Dean*

DONALD M. VESTAL, JR., *Acting Assistant Dean*

**Pre-Engineering Curriculum.** — Since the fundamentals of Engineering are common to all branches of the profession, the program of study for the Freshman year is common to all Engineering Curricula. This Freshman program is administered as a separate curriculum in the Department of Pre-Engineering. (See page 167.) The freshman programs of the Management and Science curricula are also administered by the Department of Pre-Engineering, as outlined under the paragraphs "Management Curricula" and "Science Curriculum" on pages 165 and 166.

**Admission Requirements.** — For admission to the Curriculum in Pre-Engineering graduation from an approved secondary school with a minimum of 15 units, or the equivalent as shown by examination, is required. The following program is recommended as *minimum* preparation for a college engineering education: English, four units; mathematics (including algebra, geometry and trigonometry); chemistry, physics, biology, two or three units; foreign language, two or three units; history, literature, social science, two or three units.

Completion of this program does not insure entrance without deficiencies since the thoroughness of preparation will vary, and placement tests may indicate weaknesses. Appropriate additional work should be taken to extend each individual to his fullest capacity.

Because of the scope of the engineering profession and the fact that the prospective engineer is educated not for engineering alone but also for becoming an adult member of society, it is essential that he have a truly liberal education. This requires an understanding of society, its culture and its origin, which can be gained partially by the study of literature, history, economics, the arts and other branches of humanities and social sciences. Preparatory courses of high intellectual quality in these areas are necessary for candidates for engineering as is true for other college areas.

The ability to communicate with his fellow man is absolutely essential to the engineer. The secondary school student needs four years of English in order to gain the ability to read, write, speak and listen with precision, facility, clarity and understanding.

Preparation for world-wide communication and travel, now possible because of great engineering achievement, calls for study by engineers of foreign languages. Study should begin as early as possible, even in elementary or junior high school, and should include a minimum of two years in at least one foreign language in secondary school.

Mathematics and the sciences are the fundamentals upon which the profession of engineering is built. The prospective engineering student must acquire the best possible background of mathematics in elementary, junior high and senior high school. The college preparatory mathematics should include two and one-half units of algebra, one unit of geometry including geometry of

\* On leave.

three dimensions, and one-half unit of trigonometry or the equivalent in a coordinated four-year modern college preparatory mathematics program. These mathematics courses definitely should be deep and rigorous and preferably of modern design. The student will need at least one year of physics and one year of chemistry. Biology is advantageous but should not be selected in preference to physics or chemistry. The courses in science should stress concepts and methods of science and should not be courses in the wonders of science.

Applicants are admitted to curricula in the School of Engineering by the Engineering Admissions Committee after satisfactory performance in the appropriate freshman program. Applicants for admission to Aerospace, Civil, Electrical, Industrial, and Mechanical Engineering will be approved upon completion with satisfactory grades of prescribed courses in mathematics, 15 hours; English Composition, 10 hours; chemistry, 10 hours; and engineering graphics including descriptive geometry, 6 hours; a total of 41 hours. Admission to Aeronautical Administration will be approved upon satisfactory completion of 50 quarter hours and to Textile Management and Textile Science upon satisfactory completion of 45 quarter hours of the work prescribed for the freshman year.

**Engineering Curricula.**—Curricula offered are designed to meet the educational requirements of the engineering profession. The program in the fundamental sciences of mathematics, chemistry, and physics is followed by a study of basic engineering sciences. Specialized or departmental courses follow in the third and fourth years. A parallel program emphasizing the humanistic-social studies, including history, literature, economics, philosophy and similar courses, is followed throughout the four years having as its objective a good general education for the engineering student.

Accredited curricula lead to the degrees of Bachelor of Aerospace Engineering, Bachelor of Civil Engineering, Bachelor of Electrical Engineering, and Bachelor of Mechanical Engineering. Accredited curricula in Agricultural Engineering and Chemical Engineering are offered by the Schools of Agriculture and Chemistry respectively.

A new curriculum in Industrial Engineering leads to the degree of Bachelor of Industrial Engineering. This curriculum replaces the Industrial Management curriculum previously offered. Students already enrolled in the Industrial Management curriculum may continue their present degree objective or may choose to study for the Bachelor of Industrial Engineering degree.

Engineering students who wish to lighten the load of a four-year curriculum may schedule 15 or 16 hours per quarter rather than the prescribed 18 to 20 hours. It is recommended that students not well-grounded in English, mathematics or science plan their programs on the basis of the lighter load. This will require one or more additional quarters of residence.

**Management Curricula.**—Two management curricula leading to the degrees of Bachelor of Aeronautical Administration and Bachelor of Textile Management prepare young men and women for a wide range of administrative and managerial positions in industry. The program of study in the freshman year provides a period of orientation, guidance, and selection. Freshmen are registered in the Department of Pre-Engineering as Pre-Engineering-Management students, and are admitted to management curricula upon successful completion of the freshman program.

**Science Curriculum.** — A curriculum in Textile Science leading to the degree Bachelor of Textile Science is offered in the Department of Textile Technology.

**Graduate Degrees.** — Master of Science degrees are offered in Aerospace, Civil, Electrical, and Mechanical Departments. The Doctor of Philosophy degree is offered in the Electrical and Mechanical Engineering Departments. For requirements for these degrees, see Graduate School Bulletin.

**Service Departments.** — The Departments of Engineering Graphics and Industrial Laboratories are service departments to the School of Engineering. However, the courses offered in these departments may also be taken by students in other schools who may find them useful in their particular fields. The Department of Industrial Laboratories, in cooperation with the School of Education, offers a program for the professional and technical training of Industrial Arts teachers for elementary and secondary schools. (See School of Education for major and minor requirements.)

### CO-OPERATIVE EDUCATION PROGRAM

The Co-operative Education Program is offered in all curricula of the School of Engineering. Please refer to page 86 for a brief description of the program and write to the Director, Engineering Extension Service, for a booklet which gives additional information.

## Auburn School of Aviation

ROBERT G. PITTS, *Director*

The Auburn School of Aviation was established in 1942 as a department of the School of Engineering to offer flight and ground school instruction in aircraft piloting for resident and extension students of the University, for the Armed Forces, and for the general public; and to serve the citizens of Alabama and the Southern Region by providing other services in the broad field of aviation. The School cooperates fully with the Federal Aviation Agency in conducting special aviation training programs. At the present time the school is conducting a flight program for the training of private pilots, commercial pilots, and flight instructors.

The University is exceptionally well equipped to conduct pilot training programs inasmuch as it owns a large modern airport of 325 acres conveniently located within two miles of the campus. The landing field consists of two paved runways 4,000 feet long and one sod strip 5,600 feet long. Other facilities include two large hangars and a modern Administration Building.

In addition to the training of pilots, such other public service accommodations as airplane storage, servicing, maintenance, and repair are provided at the airport. In conjunction with the Aerospace Engineering Laboratories located on the campus, the operation at the airport serves as an excellent laboratory of practical training for students enrolled in the curricula of Aeronautical Administration and Aerospace Engineering. Because of the excellent aviation facilities, the University has been fully certified by the Federal Aviation Authority as an Approved Ground and Flight School.

The Director of the Auburn School of Aviation is an Aircraft Inspection Representative for the Federal Aviation Agency.

## Pre-Engineering

HOWARD STRONG, Assistant to the Dean for Pre-Engineering

The Pre-Engineering Program consists of a freshman program of studies to prepare students for admission to the School of Engineering with sophomore standing.

The freshman Pre-Engineering curriculum shown below is uniform for five Engineering curricula: namely, Aerospace, Civil, Electrical, Industrial, and Mechanical Engineering. It is designed for students whose ACT or College Board (SAT) Tests indicate that they are capable of being successful in Mathematics 161, English 101 or 103, and Chemistry 103. Students who are required to schedule courses below these levels in mathematics, English, and chemistry are expected to plan, with the help of the Assistant to the Dean for Pre-Engineering, a program of work for four, five, or more quarters, depending upon their aptitude and extent of high school preparation. Copies of Pre-Engineering programs which suggest combinations of courses for a four-quarter or five-quarter plan may be obtained from the Pre-Engineering office.

### Three Quarter Curriculum

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
EH 101 English Comp. ....5		CH 103 General Chemistry .4		CH 104 General Chemistry .4	
*HY 104 Hist. Mod. World 3		CH 103L Gen. Chem. Lab. .1		CH 104L Gen. Chem. Lab. .1	
MH 161 Anal. Geom. & Cal. 5		EH 102 English Comp. ....5		MH 263 Anal. Geom. & Cal. 5	
EG 102 Engr. Drawing I ....2		MH 262 Anal. Geom. & Cal. 5		EG 105 Engr. Drawing II .2	
IL 102 Welding Science ....1		EG 104 Descriptive Geom. .2		PN 103 Engineering Method 1	
IL 103 Mach. Tool Lab. ....1		PN 102 Introduction to		PS 201 Gen. Physics	
PN 101 History of Engr. ....1		Engr. Profession ....1		Mechanics .....5	
MS Military Training ....1		MS Military Training ....1		MS Military Training ....1	
PE Physical Education ....1		PE Physical Education ....1		PE Physical Education ....1	
	20		20		20

\* Students who do not qualify for the three-quarter program will schedule HY 107 instead of HY 204.

Note: The freshman program of studies in the Aeronautical Administration curriculum is carried on page 168; the Textile Management curriculum on page 176; and the Textile Science curriculum on page 177.

## Curricula in Engineering

**Humanistic-Social Studies.**—The various engineering curricula are arranged to allow students in those curricula the opportunity to schedule a minimum of 30 quarter credit hours of humanistic-social studies. A few courses are prescribed, but the student may choose, in addition, several humanistic-social courses of particular interest to him. The courses from which he may choose these electives are listed below.

### APPROVED ELECTIVES

<b>HISTORY AND GOVERNMENT</b>		HY 460 Great Leaders of History .....	5
HY 204 History of the Modern World .....	3	HY 472 History of England .....	5
HY 206 United States Government .....	5	HY 482 History of the South .....	5
HY 207 or 208 World History .....	5	HY Current Events .....	1
HY 311 Medieval History .....	5	<b>LITERATURE</b>	
HY 312 Modern European History .....	5	EH 108 Classical Literature .....	5
HY 314 United States Colonial History .....	3	EH 208 Literature of the Western World .....	3
HY 315 International Organization .....	3	EH 253 Literature in English .....	5
HY 322 The U.S. in World Affairs .....	3	EH 254 Literature in English .....	5
HY 371 History of the West .....	3	EH 320 An Introduction to Drama .....	3
HY 407 Political Science .....	5	EH 350 Shakespeare's Greatest Plays .....	3

EH 360 Continental Fiction .....	3	GY 407 World Resources and Their Utilization .....	5
EH 365 Southern Literature .....	3		
EH 381 The Literature of the Age of Reason .....	3	<b>SOCIOLOGY</b>	
EH 385 The Impact of Science and Technology upon Modern Literature .....	3	SY 201 Introduction to Sociology .....	5
SP 334 Great American Speeches .....	3	SY 204 Social Behavior .....	5
		SY 307 The Court and Penal Administration .....	3
<b>THE ARTS</b>		SY 311 Technology and Social Change .....	3
AT 332 American Painting and Sculpture .....	3	<b>PHILOSOPHY AND RELIGION</b>	
AT 431 Contemporary Art .....	3	PA 202 Ethics and Society .....	5
AR 360 Appreciation of Architecture .....	3	PA 301 Introduction to Philosophy .....	3
DR 313 Drama Appreciation I .....	3	PA 302 Introduction to Ethics .....	3
DR 314 Drama Appreciation II .....	3	PA 307 Scientific Reasoning .....	5
MU 373 Appreciation of Music .....	3	PA 308 Introduction to Logic .....	3
MU 374 Masterpieces of Music .....	3	PA 330 Philosophy of Religion .....	5
<b>ECONOMICS AND GEOGRAPHY</b>		PA 400 Philosophy of Science .....	5
EC 200 General Economics .....	5	PA 440 American Philosophy .....	5
EC 206 Socio-Economic Foundations of Contemporary America .....	3	RE 303 Christian Ethics .....	5
EC 301 Geo-Political Basis of World Powers .....	3	RE 305 Comparative Religion .....	3
EC 357 Economic History of Europe .....	5	RE 306 Studies in the Gospels .....	3
EC 358 Economic History of the U.S. ....	5	<b>PSYCHOLOGY</b>	
GY 405 Cultural Geography of the World ..	5	PG 211 General Psychology .....	5
		PG 311 Behavior of Man .....	3
		PG 461 Industrial Psychology .....	5

## Aeronautical Administration

The curriculum in Aeronautical Administration provides training for students who intend to hold positions with concerns engaged in aeronautics, aviation, aerospace and related industries. Study in the methods, economics, and principles of business is combined with certain fundamental aeronautical courses, thus resulting in a curriculum designed to prepare graduates for administrative, management, sales and operational positions. Electives in the senior year enable students to concentrate in the areas of business administration, industrial relations, production management, sales management, pilot training or a foreign language.

### Curriculum in Aeronautical Administration (AA)

#### FRESHMAN YEAR

FIRST QUARTER	SECOND QUARTER	THIRD QUARTER
CH 103 General Chemistry ..4	CH 104 General Chemistry ..4	EG 105 Engr. Drawing II ..2
CH 103L Gen. Chem. Lab. ..1	CH 104L Gen. Chem. Lab. ..1	HY 107 United States Hist. ..5
EG 102 Engr. Drawing I ..2	EG 104 Descriptive Geom. ..2	IL 104 Sheet Metal Design & Fabrication ..1
EH 101 English Comp. ....5	EH 102 English Comp. ....5	MH 127 Elem. Mathematical Statistics or
MH 111 Intr. College Math. ..5	MH 112 Intr. College Math. ..5	MH 161 Anal. Geometry and Calculus .....
IL 102 Weld. Sci. & App. ..1	IL 103 Machine Tool Lab. ..1	PS 204 General Physics ..5
MS Military Training ....1	MS Military Training ....1	MS Military Training ..1
PE Physical Education ..1	PE Physical Education ..1	PE Physical Education ..1

#### SOPHOMORE YEAR

EC 213 Engr. Accounting ..5	AA 201 Elem. Aeronautics ..5	AA 303 Air Navigation I ..5
EH 345 Business and Prof. Writing .....	EC 200 General Economics ..5	AA 305 Aviation Meteorology .....
GY 103 Econ. Geography or	EC 214 Cost Control .....	EH 310 Word Study .....
HY 206 U.S. Gov't. ....5	EH 208 Lit. of Western World .....	IE 201 Industrial Engr. ....5
*SA 113 Typewriting .....	MS Military Training ....1	MS Military Training ....1
MS Military Training ....1	PE Physical Education ..1	PE Physical Education ..1
PE Physical Education ..1		

\* Students who have one unit of high school typing will not be allowed credit for SA 113. An elective, approved by the Head of the Department will be substituted.

## JUNIOR YEAR

## FIRST QUARTER

AA 308	Federal Aviation Regulations .....	3
EC 404	Office Management .....	5
EC 442	Personnel Mgt. ....	5
IE 204	Digital Computer Programming .....	3
**SP 305	Public Speaking .....	3

## SECOND QUARTER

AA 307	Air Navigation II ..	5
EC 341	Business Law .....	5
PG 461	Industrial Psych. ....	5
**IE 314	Electronic Data Processing Machines ..	3

## THIRD QUARTER

AA 407	Aircraft Power-Plants .....	5
EC 245	Statistics .....	5
EC 463	Crop. Finance .....	5
***	Elective .....	3

## SENIOR YEAR

AA 416	Airport Management ..	5
AA 419	Air Traffic Control .....	5
***	Major Elective .....	5
***	Elective .....	3

AA 418	Air Transportation ..	5
AA 425	Aircraft Components ..	5
***	Major Elective .....	5
***	Elective .....	3

AA 403	Aeronautical Seminar .....	1
AA 417	Airline Operation .....	5
IE 430	Contracts & Specification .....	3
***	Major Elective .....	5

Total—228 quarter hours

\*\* Six hours of Advanced ROTC may be substituted for SP 305 and IE 314.

\*\*\* Courses used as general electives must be approved by the Head of the Department.

\*\*\*\* Major electives must be approved by the Department Head and should be selected from the general areas of business administration, industrial relations, pilot training, production management, sales management and/or foreign languages.

## Aerospace Engineering

The curriculum in Aerospace Engineering provides an especially good educational background for those wishing to enter the many areas of today's major scientific effort—conquest of space. It also places emphasis on conventional aircraft, missiles and aero-propulsion systems. The first two years of the curriculum are devoted to the basic subjects of mathematics, physics and mechanics. The last two years deal with such broad areas as aerodynamics, design, propulsion, structures and space science. During the senior year students may schedule technical electives in several fields of specialization. The Aerospace Engineering Curriculum also serves as an excellent background for graduate work and research.

## Curriculum in Aerospace Engineering (AE)

## FRESHMAN YEAR

(See Pre-Engineering Curriculum, Page 167)

## SOPHOMORE YEAR

## FIRST QUARTER

ME 205	Applied Mechanics—Statics .....	4
ME 202	Engineering Mtrls. Science—Structure ..	3
MH 264	Analytic Geometry & Calculus IV .....	5
PS 202	General Physics—Heat, Sound, & Light .....	5
LY 101	Use of the Library ..	1
MS	Military Training ..	1
PE	Physical Education ..	1

## SECOND QUARTER

ME 321	Dynamics of a Particle .....	4
ME 306	Strength of Materials I .....	4
MH 361	Differential Equations I .....	5
PS 203	General Physics—Electricity & Magnetism .....	5
MS	Military Training ..	1
PE	Physical Education ..	1

## THIRD QUARTER

AE 205	Aerospace Fundamentals .....	3
AE 300	Aerospace Analysis .....	5
ME 301	Thermodynamics I ..	4
ME 322	Dynamics of Systems of Particles ..	4
HY 105	Current Events .....	1
MS	Military Training ..	1
PE	Physical Education ..	1



## JUNIOR YEAR

## FIRST QUARTER

AE 206 Elementary Astronautics .....	3
AE 301 Basic Aerodynamics .....	5
AE 308 Aircraft Structures I .....	5
*PS 301 Intermediate Elec. and Magnetism .....	5

## SECOND QUARTER

AE 309 Aerodynamics Laboratory I .....	1
AE 409 Aircraft Structures II .....	5
AE 412 Airplane Structures Laboratory .....	2
AE 413 Theoretical Aerodynamics .....	5
*PS 302 Electronics .....	5

## THIRD QUARTER

AE 404 High Speed Aerodynamics .....	5
AE 415 Rocket and Jet Propulsion .....	5
PA 202 Ethics and Society .....	5
**Elective .....	4

## SENIOR YEAR

AE 405 Boundary Layer Theory & Aero- dynamic Heating .....	5
AE 429 Aircraft Vibration and Flutter .....	5
Technical Elective .....	5
***SP 305 Public Speaking .....	3

AE 401 Aeronautical Problems I .....	1
AE 403 Stability and Control .....	5
AE 408 Aerodynamics Laboratory II .....	1
AE 414 Gasdynamics .....	5
**Elective .....	5

AE 402 Aeronautical Problems II .....	1
AE 411 Airplane Design .....	5
AE 431 Astronautics .....	5
**Elective .....	8

Total—228 quarter hours

\* Students may take PS 301 and 302 or EE 263, EE 361 and one other EE course.

\*\* Electives must be approved by the Department Head.

\*\*\* Six hours of Advanced ROTC may be substituted for SP 305 (3 hrs.) and three additional hours approved by the Department Head.

## SUGGESTED TECHNICAL ELECTIVES

In addition to the subjects listed below, other subjects may be used as technical electives upon approval of the Head of the Department.

AE 428 Space Propulsion Systems .....	5	MH 460 Numerical Analysis I .....	5
AE 430 Rotary Wing Aircraft .....	5	PS 305 Introduction to Modern Physics .....	5
ME 421 Heat Transfer .....	5	PS 405 Nuclear Physics .....	5

## Civil Engineering

The Civil Engineering curriculum is designed to provide a sound training in mathematics and the physical sciences, in the applied sciences and principles of civil engineering, in a limited number of technical electives, and in humanistic-social studies. The objective of the curriculum is to prepare the graduate for further training by his employer and for the eventual practice of civil engineering. Courses in mathematics and the physical sciences constitute the foundation upon which the professional training is built. The success of the professional training is dependent upon the strength of this foundation. Technical electives provide for limited specialization in some branch of civil engineering such as highway, hydraulic, sanitary, soils or structural engineering.

Training in civil engineering may lead to professional activities in analysis, design, research, construction, production or sales. Such activities may be directly or indirectly concerned with highways, railroads, dams and appurtenant structures, rivers, harbors, water supply, sewage disposal, industrial wastes, foundations, buildings, bridges, etc.

The civil engineer has held a leading role in the development of our country. As in most of the professions, great changes are taking place in methods and equipment. It is to be expected that the civil engineer will take full advantage of recent advancements in science.

## Curriculum in Civil Engineering (CE)

## FRESHMAN YEAR

(See Pre-Engineering Curriculum, Page 167)

## SOPHOMORE YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
CE 301	Surveying I .....5	CE 203	Surveying II .....4	CH 342	Geology .....3
ME 202	Engr. Materials	EH 108	Classical Lit. ....5	CE 220	Hwy. Engr. I .....5
	Science .....3	ME 205	Statics .....4	EC 200	General Economics .5
MH 264	Anal. Geom. & Cal. 5	PS 203	Gen. Physics—Elec.	MH 361	Diff. Equations .....5
PS 202	Gen. Physics—Heat,		& Magnetism .....5	MS	Military Training ....1
	Sound, & Light .....5	MS	Military Training ....1	PE	Physical Education ....1
MS	Military Training ....1	PE	Physical Education ....1		
PE	Physical Education ....1				

## JUNIOR YEAR

EE 304	Electric Circuits .....4	CE 304	Theory of Structures I .....5	CE 303	Structural Mat'l's. Testing .....3
HY 107	United States History .....5	CE 308	Hydraulics .....5	CE 305	Sanitary Engr. I .....5
ME 306	Strength of Materials I .....4	CE 314	Analysis of Aerial Photographs .....3	CE 380	Theory of Structures II .....5
ME 307	Applied Mech.—Dynamics .....5	IE 320	Engr. Economy .....5	EE 305	Electronics & Instr. 5

## SENIOR YEAR

CE 404	Rein. Concrete .....5	CE 405	Sanitary Engr. II .....5	EC 206	Socio Econ. Found. of Contemp. America .....3
CE 418	Soil Mechanics .....5	CE 406	Hydraulics Lab. ....1	EH 208	Literature of the Western World .....3
†EC 343	Law and Contracts 3	CE 414	Structural Design I .4		Technical Elective .5
ME 310	Thermodynamics .....5	†SP 305	Public Speaking .....3		*Elective .....7
			Technical Elective .5		

Total—228 quarter hours

\* Courses used for electives must be selected from the list of Humanistic-Social Studies (p. 167), subject to approval of the Department Head.

† Six hours of Advanced ROTC may be substituted for SP 305 (3 hrs.) and EC 343 (3 hrs.).

## SUGGESTED TECHNICAL ELECTIVES

CE 400	Higher Surveying .....5	CE 420	Sanitary Engineering Lab. ....5
CE 402	Intermediate Structures .....5	CN 440	Nuclear Engineering .....5
CE 407	Municipal Engineering I .....5	EC 345	Statistics .....5
CE 408	Engineering Foundations .....5	ME 206	Engl. Materials Science-Properties .3
CE 409	Public Health Engineering .....5	ME 335	Engl. Materials Science-Physical Metallurgy .....4
CE 410	Highway Engineering II .....5	MH 402	Engineering Mathematics I .....5
CE 411	Flow in Open Channels .....5	MH 404	Engineering Mathematics III .....5
CE 412	Hydrology .....5	MH 460	Numerical Analysis I .....5
CE 413	Hydraulic Structures .....5	MH 461	Numerical Analysis II .....5
CE 415	Construction Planning .....5	PS 401	Theoretical Physics I—Mechanics .5
CE 416	Prestressed Concrete Design .....5	PS 402	Theoretical Physics II—Mechanics .5
CE 417	Structural Design II .....5	PS 405	Nuclear Physics .....5
CE 419	Municipal Engineering II .....5		

## Electrical Engineering

The curriculum in Electrical Engineering is designed to keep pace with significant developments in science and technology; to provide an educational preparation that assures maximum rate of progress in the engineering profession; and to do this within the framework of a sound and extensive humanistic-social program.

The Electrical Engineering curriculum is organized around four basic areas of study. These areas are designed to provide a firm background in the basic concepts required for all Electrical Engineering students and are (1) Circuit Analysis, (2) Electronics and Communication, (3) Energy Conversion and Transmission, and (4) Electromagnetic Fields. In addition, the senior year of the curriculum is arranged so that a student, through his choice of technical electives, can concentrate on topics of individual interest. Included in these

specialized topics are closed-loop control systems, analog and digital computers, generation and transmission of electrical power, advanced communications systems, solid state electronics, and network synthesis.

All required courses have associated laboratories, in order to keep the student in maximum contact with the realities of the practice of engineering.

### Curriculum in Electrical Engineering (EE)

#### FRESHMAN YEAR

(See Pre-Engineering Curriculum, Page 167)

#### SOPHOMORE YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
ME 205	Applied Mechanics-Statics .....	ME 321	Dynamics I .....	EE 263	Circuit Analysis .....
	.....4	ME 306	Strength of Materials .....	ME 301	Thermodynamics .....
ME 202	Engr. Materials Science-Structure .....		.....4	ME 322	Dynamics II .....
	.....3	MH 361	Diff. Equations I .....	MH 362	Engr. Math. I .....
MH 264	Analytic Geometry and Calculus .....	PS 203	Electricity and Magnetism .....	MS	Military Training .....
	.....5		.....5	PE	Physical Education .....
PS 202	Physics—Heat, Light and Sound .....	MS	Military Training .....		.....1
	.....5	PE	Physical Education .....		.....1
LY 101	Use of the Library .....				
MS	Military Training .....				
PE	Physical Education .....				

#### JUNIOR YEAR

EE 361	Circuit Analysis II .....	EE 362	Circuit Analysis III .....	EE 363	Distributed Systems .....
EH 253	Lit. in English .....	EE 372	Electronics and Communications I .....	EE 373	Electronics and Communications II .....
	.....5		.....4		.....5
	Math. or Physics Elective .....	EH 254	Lit. in English .....	EE 383	Energy Conversion and Transmission I .....
	.....5		.....5		.....5
	Elective* .....	ME 324	Fluids .....		Elective* .....
	.....3		.....4		.....3

#### SENIOR YEAR

EE 471	Electronics and Communications III .....	EC 206	Socio-Econ. Found. of Contemp. America .....	EE 442	Closed-Loop Systems .....
	.....3		.....3	EE 493	Electromagnetic Fields III .....
EE 481	Energy Conversion and Transmission II .....	EE 482	Energy Conversion and Transmission III .....	SP 305	Public Speaking .....
	.....5		.....5		Technical Electives .....
EE 491	Electromagnetic Fields I .....	EE 492	Electromagnetic Fields II .....		.....5
	.....5		.....5		.....3
	Elective* .....		Math. or Physics Elective .....		.....5
	.....3		.....5		.....5

Total—228 quarter hours

Six hours of Advanced ROTC may be substituted for six required hours with departmental approval.

\* See approved list, page 167.

\*\* Technical Electives: EE 443, Solid State Electronics; EE 444, Digital Computers; EE 445, Nuclear Instrumentation; EE 446, Analog Computers; EE 447, Magnetic Devices; EE 461, Introductory Network Synthesis; EE 472, Communication Systems; EE 483, Energy Conversion and Transmission Systems; EE 490, Seminar.

## Industrial Engineering

The curriculum in Industrial Engineering is offered as a program of professional education in preparation for employment in the design, improvement, operation, and control of operational systems involving men, machines, and materials. Emphasis is placed upon those areas of academic education pertinent to industrial production; however, the factfinding and analysis approach of Industrial Engineering is applicable to almost any business or service enterprise.

In order to provide the scientific base required for Industrial Engineering, the student takes sequences of courses in mathematics, physics, chemistry, and

engineering science. The engineering science courses are offered through an elective-option arrangement. Since the collection, reduction, and analysis of industrial data are of prime importance to the industrial engineer, provision is made to anticipate these functions by courses in statistics, quantitative methods, and digital computer programming. The economic and human aspects of production are also recognized through appropriate subjects. Application of this fundamental knowledge is made in courses in materials handling, inventory control, production control, and industrial plant design. The basic philosophy of this curriculum is to provide and demonstrate by application the fundamental principles and techniques of Industrial Engineering.

### Curriculum in Industrial Engineering (IE)

FRESHMAN YEAR					
FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
EG 102	Engr. Drawing I ...2	CH 103	General Chemistry ...4	CH 104	General Chemistry ...4
EH 101	English Comp. ....5	CH 103L	Gen. Chem. Lab. 1	CH 104L	Gen. Chem. Lab. 1
HY 204	History of Modern World .....3	EG 104	Descriptive Geom. ...2	EG 105	Engr. Drawing II ...2
MH 161	Anal. Geom. & Cal. 5	EH 102	English Comp. ....5	MH 263	Anal. Geom. & Cal. 5
PN 101	History of Engr. ....1	MH 262	Anal. Geom. & Cal. 5	PS 201	Physics-Mechanics ...5
IL 102	Weld. Sc. & Appl. ...1	PN 102	Intr. to Engr. Prof. 1	PN 103	Engr. Method .....1
IL 103	Machine Tool Lab. 1	MS	Military Training ....1	MS	Military Training ....1
MS	Military Training ....1	PE	Physical Education ...1	PE	Physical Education ...1
PE	Physical Education ...1				

SOPHOMORE YEAR					
EC 200	General Economics ...5	EH 253	Lit. in English .....5	EC 215	Fund. of Gen. & Cost Accounting .....5
ME 202	Engr. Mat. Sc.- Struc. ....3	IE 201	Industrial Engr. ....5	IE 204	Dig. Computer Prog. ....3
MH 264	Anal. Geom. & Cal. 5	ME 206	Engr. Mat. Sc.- Prop. ....3	IE 211	Engr. Statistics I ...5
PS 202	Physics—Heat, Light and Sound .....5	PS 203	Physics—Elec. & Mag. ....5	IE 223	Quant. Methods I ...5
MS	Military Training ....1	MS	Military Training ....1	MS	Military Training ....1
PE	Physical Education ...1	PE	Physical Education ...1	PE	Physical Education ...1

JUNIOR YEAR					
HY 208	U.S. Gov't. ....5	EC 447	Job Evaluation .....3	EC 445	Ind. Relations .....5
IE 309	Prod. Estimating ...5	IE 311	Time Study .....5	EC 448	Incentive Methods ...3
IE 310	Methods Engr. ....5	IE 320	Engr. Economy .....5	IE 324	Quant. Methods II ...5
IE 312	Engr. Statistics II ...3	IE 322	Stat. Qual. Control 5		*Technical Elective ...5

SENIOR YEAR					
IE 416	Ind. Simulation .....5	IE 422	Inventory Control ....5	IE 424	Production Control 5
IE 420	Materials Handling 5		Technical Elective ...5	IE 428	Ind. Plant Design ...5
	*Technical Elective ...4		*Technical Elective ...5		*Technical Elective ...6
	**Elective .....3		**Elective .....3		**Elective .....3

Total—228 quarter hours

\* These four technical electives are to be selected with Department Head approval as an Engineering Science Option, totaling a minimum of 18 hours. A list of such options is available in the Industrial Engineering Department.

\*\* Electives must be selected from the approved list of Humanistic-Social Studies, subject to approval of the Department Head. Six hours of advanced ROTC may be substituted with Department Head approval.

### SUGGESTED TECHNICAL ELECTIVES

In addition to the subjects listed below, other subjects may be used as technical electives by approval of the Department Head.

IE 430	Contracts and Specifications .....3	IE 438	Safety Engineering .....5
IE 432	Plant Maintenance .....3	IE 442	Operations Research .....5
IE 434	Sales Engineering .....3	IE 490	Problems in Industrial Engineering ...3
IE 436	Plant Location .....5		

# Mechanical Engineering

Students who complete the curriculum in Mechanical Engineering have a broad field from which to select their life's work. Industrial positions in manufacturing, marketing, maintenance, and design are available to graduate mechanical engineers in a large variety of companies which produce mechanical, chemical, electrical, aeronautical, and petroleum products. In addition, the graduate is prepared by his college training, when supplemented by experience and practical training, to specialize in management or engineering services, such as consulting and sales. The curriculum also is suitable for students intending to enter the fields of engineering education and research. It is an excellent base for further study at the graduate level in this and allied fields.

The curriculum provides the student with a strong background in mathematics and the physical sciences. The basic engineering science fields of engineering mechanics, materials science, thermodynamics, fluid mechanics, and heat transfer are covered in depth to provide the student with understanding and the ability to solve problems in these areas. In addition, professional training is given in combustion engines, including gas turbines and rockets, power plants, air conditioning, refrigeration, automatic controls, turbomachinery and machine design. A series of courses in electrical theory and electronics is also included to equip the graduate with needed fundamental knowledge in this rapidly expanding field.

Humanistic-social subjects are required to give the student breadth and to add to his general education.

Technical electives are provided in the senior year of the curriculum to enable students to specialize to a limited extent. Students intending to undertake graduate studies may take additional mathematics in lieu of certain professional technical electives.

## Curriculum in Mechanical Engineering (ME)

### FRESHMAN YEAR

(See Pre-Engineering Curriculum, Page 167)

### SOPHOMORE YEAR

#### FIRST QUARTER

ME 205	Applied Mechanics— Statics .....	4
ME 202	Engineering Materials Science—Structure ..	3
MH 264	Analytic Geometry & Calculus .....	5
PS 202	Physics—Heat, Light and Sound .....	5
LY 101	Use of the Library ..	1
MS	Military Training ..	1
PE	Physical Education ..	1

#### SECOND QUARTER

ME 306	Strength of Materials I .....	4
ME 321	Dynamics of a Particle .....	4
MH 361	Differential Equations .....	5
PS 203	Physics—Electricity and Magnetism .....	5
MS	Military Training ..	1
PE	Physical Education ..	1

#### THIRD QUARTER

EE 263	Circuit Analysis I ..	5
ME 322	Dynamics of Systems of Particles .....	4
ME 301	Thermodynamics I ..	4
MH 362	Engineering Math. I ..	5
MS	Military Training ..	1
PE	Physical Education ..	1

### JUNIOR YEAR

EE 361	Circuit Analysis II ..	5
EH 108	Classical Literature or .....	
PA 202	Ethics and Society ..	5
ME 206	Engineering Materials Science—Properties ..	3
ME 302	Thermodynamics II ..	4
ME 308	ME Laboratory I ..	1

EE 372	Electronics and Communications I ..	4
ME 309	Strength of Ma- terials Laboratory ..	1
ME 311	ME Laboratory II ..	1
ME 316	Strength of Materials II .....	4
ME 324	Fluid Mechanics I ..	4
ME 427	Mechanical Vibrations .....	4

EC 206	Socio-Economic Foundations of Con- temporary America ..	3
ME 323	Dynamics of Machines .....	4
ME 325	Fluid Mechanics II ..	4
ME 335	Engineering Materials Science—Physical Metallurgy .....	4
PA 308	Introduction to Logic .....	3

## SENIOR YEAR

## FIRST QUARTER

ME 410 Power Systems .....	4
ME 421 Heat Transfer .....	4
ME 439 Machine Design I .....	4
**Electives .....	6

## SECOND QUARTER

ME 412 Combustion Engine Systems .....	4
ME 440 Machine Design II .....	4
ME 424 ME Laboratory IV .....	2
Technical Elective .....	5
**Elective .....	3

## THIRD QUARTER

ME 451 Advanced Projects .....	3
ME 411 ME Laboratory III .....	2
*SP 305 Public Speaking .....	3
Technical Elective .....	4
**Electives .....	6

Total—228 quarter hours

\* Six hours of Advanced ROTC may be substituted for SP 305, and three additional hours approved by the Department Head.

\*\* Electives must be selected from the list of Humanistic-Social Studies, subject to approval of the Department Head.

## SUGGESTED TECHNICAL ELECTIVES

In addition to the subjects listed below, other subjects may be used as technical electives upon approval of the Head of the Department and the Dean of Engineering.

CE 304 Theory of Structures .....	5	ME 430 Internal Combustion Engines Problems .....	4
CE 305 Water Supply .....	5	ME 432 Automatic Controls .....	4
CE 402 Indeterminate Structures .....	5	ME 438 Engineering Materials Science—Ferrous Metallurgy .....	4
CE 404 Reinforced Concrete .....	5	ME 437 Engineering Materials Science—Non-ferrous Metallurgy .....	4
CN 440 Nuclear Engineering .....	5	ME 438 Residual Stresses in Metals .....	4
EE 362 Circuit Analysis III .....	5	ME 441 Engineering Systems I .....	4
EE 363 Distributed Systems .....	5	ME 442 Engineering Systems II .....	4
EE 383 Energy Conversion & Transmission I .....	4	ME 450 Special Problems .....	1-5
EE 442 Closed-Loop Systems .....	4	MH 403 Engineering Mathematics II or	
EE 491 Electromagnetic Fields I .....	4	MH 404 Engineering Mathematics III or	
IE 320 Engineering Economy .....	5	MH 460 Numerical Analysis I .....	5
ME 414 Turbomachines .....	4	PS 305 Introduction to Modern Physics .....	5
ME 425 Gas and Steam Turbines .....	4		
ME 426 Steam Turbines .....	4		
ME 428 Air Conditioning and Refrigeration .....	4		

## Textile Technology

The Department of Textile Technology, housed in the Textile Building, is equipped with full-size machinery of a complete textile mill for the manufacture of a wide variety of fabrics from the processing of the raw material to the weaving of the finished product. The facilities also include laboratories for bleaching, dyeing, finishing, and the physical and chemical testing of fibers and fabrics.

The textile industry is now the largest industry in Alabama, comprising more than 25 per cent of the total industrial working force in the State. The greater portion of the textile industry, making yarn on the cotton system, is now located in the South and Southeast. In the Southern Region alone, there are some 1500 plants which process cotton, rayon, nylon, wool, and paper and an almost unlimited number of finished products. The industry is growing rapidly in all branches.

The size and diversity of the textile and allied industries, including manufacturers of textile machinery and equipment, chemicals and dyestuffs, research laboratories, textile supply and sales houses, afford unusual opportunities for college-trained men and women. Recent developments are opening new fields of employment in research and development and in the processing of new fibers. The need for college graduates in textile technology has never been greater than at the present time, nor is the demand likely to be met within the next several years.

The Department of Textile Technology offers two curricula to prepare students for all branches of the industry. The textile courses in these curricula are



combined with courses offered by other departments of the University to provide basic instruction in the fundamental sciences, engineering, and technological subjects, and the humanistic-social studies. The two curricula are:

**Textile Management.** — The curriculum in Textile Management is designed to prepare the student for production, administrative, and managerial positions in the textile and allied industries. Emphasis is placed on production and operational functions and the humanistic-social studies with the inclusion of textile technological subjects. Students are permitted in their junior and senior year to major in production, sales, or design according to their interests and professional needs.

**Textile Science.** — The curriculum in Textile Science is designed to train men and women in the basic sciences with majors in Textile Chemistry and Textile Physics. It includes basic engineering sciences, humanistic-social studies, and textile technological subjects needed for a well-rounded training in the textile industry. It prepares students for positions in textile research, graduate study, and various industries related to textile chemistry, dye stuffs, synthetic fibers and yarn production.

The Alabama textile industry cooperates with the Department of Textile Technology by assisting worthy young men and women to obtain a college education through the Cooperative Education Program, which is described on page 86 of this catalog.

The Department of Textile Technology is organized and equipped to conduct applied and fundamental research. In cooperation with the Auburn Research Foundation, the Engineering Experiment Station, and other departments of the University, the Department of Textile Technology desires to serve the textile industry of the region through the full utilization of its facilities.

### Curriculum in Textile Management (TM)

#### FRESHMAN YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
EH 101	English Comp. ....5	CH 103	General Chemistry ..4	CH 104	General Chemistry ..4
HY 107	United States Hist. 5	CH 103L	Gen. Chem. Lab. ..1	CH 104L	Gen. Chem. Lab. ..1
MH 111	Intr. to College Math. ....5	EH 102	English Comp. ....5	MH 127	Math. Statistics ....5
TT 101	Intr. to Textiles ....1	MH 112	Intr. to College Math. ....5	PA 202	Ethics and Society ..5
MS	Military Training ....1	IL 103	Machine Tool Lab. ..1	MS	Military Training ....1
PE	Physical Education ..1	MS	Military Training ....1	PE	Physical Education ..1
		PE	Physical Education ..1		

#### SOPHOMORE YEAR

EC 206	Soc. Ec. Foundation 3	PG 211	General Psychology 5	EC 200	General Economics ..5
HY 206	U.S. Government ....5	SY 201	Intr. to Sociology ..5	PS 204	Survey in Physics ..5
TT 210	Fiber Processing ....5	TT 220	Weaving & Design ..5	TT 211	Yarn Mfg. I .....5
TT 305	Fiber Technology ..3	EG 102	Engr. Drawing I .....2	MS	Military Training ....1
MS	Military Training ....1	MS	Military Training ....1	PE	Physical Education ..1
PE	Physical Education ..1	PE	Physical Education ..1		

#### JUNIOR YEAR

IE 201	Industrial Engr. ....5	SP 305	Public Speaking ....3	EH 345	Bus. & Prof. Writ. ..5
TT 307	Bleaching & Dyeing 5	TT 317	Dyeing & Finishing 5	TT 319	Chemical Testing ....2
TT 322	Yarn Mfg. II .....5	TT 320	Weaving & Des. II ..5	TT 321	Weaving & Design III .....5
	Elective .....3	TT 324	Physical Testing ....3	TT 418	Jacquard Weav. & Design .....2
			Elective .....3		Elective .....3

## SENIOR YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
EC 350	Labor Problems .....5	EC 442	Personnel Mgt. ....5	TT 424	Man-Made Fibers I 5
TT 406	Textile Costing .....5	TT 405	Warp Preparation ....5	TT 412	Textile Mgt. ....3
	Group Elective .....5		Group Elective .....5	TT 431	Fabric Analysis .....3
	Elective .....3		Elective .....3		Group Elective .....5
					Elective .....3

## Total—216 quarter hours

Textile Management students will take the above curriculum plus three of the group electives in accordance with interests and professional needs. General electives may be selected from approved list on page 167. Six hours of Advanced ROTC may be substituted for six hours of general electives. Substitutions not included on either of these lists may be made with the approval of the Department Head.

## APPROVED ELECTIVES

IE 310	Methods Engr. ....5	EC 331	Prin. of Marketing .5	EC 213	Engr. Acctg. ....5
IE 311	Time Study .....5	EC 333	Salesmanship .....5	EC 214	Engr. Acctg. ....5
IE 320	Engr. Economy .....5	EC 341	Business Law .....5	HE 415	Hist. of Textiles .5
IE 322	Stat. Qual. Control 5	EC 245	Statistics .....5	PG 360	Applied Psy. ....5
IE 420	Mat. Handling .....5	EC 436	Bus. Res. Methods .5	PG 461	Indus. Psy. ....5
IE 438	Safety Engr. ....5	EC 445	Ind. Relations .....5	TT 425	Man-Made Fibers II 5

## Curriculum in Textile Science (TS)

## FRESHMAN YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
EH 101	English Comp. ....5	CH 103	General Chemistry .4	CH 104	General Chemistry .4
HY 107	United States History .....5	CH 103L	Gen. Chem. Lab. 1	CH 104L	Gen. Chem. Lab. 1
MH 111	Intro. College Math. 5	EH 102	English Comp. ....5	MH 161	Anal. Geom. & Cal. 5
TT 101	Intro. to Textiles .1	MH 112	Intr. College Math. 5	PA 202	Ethics & Society .5
MS	Military Training .1	IL 103	Machine Tool Lab. 1	EG 102	Engr. Draw. I .....2
PE	Physical Education .1	MS	Military Training .1	MS	Military Training .1
		PE	Physical Education .1	PE	Physical Education .1

## SOPHOMORE YEAR

HY 206	United States Government .....5	EC 206	Socio-Economics Foundations .....3	EC 200	General Economics 5
MH 262	Anal. Geom. & Cal. 5	MH 263	Anal. Geom. & Cal. 5	PS 206	Intr. Physics .....5
TT 210	Fiber Processing .5	PS 205	Intr. Physics .....5	TT 211	Yarn Mfg. ....5
EG 105	Engr. Drawing II .2	TT 220	Weaving & Design I 5	TT 305	Fiber Technology .3
MS	Military Training .1	MS	Military Training .1	MS	Military Training .1
PE	Physical Education .1	PE	Physical Education .1	PE	Physical Education .1

## JUNIOR YEAR

EE 304	Electric Circuits ....5	EE 305	Electronics & Machinery .....5	IE 201	Ind. Engr. ....5
TT 307	Bleaching & Dye. .5	TT 320	Weav. & Des. II ....5	ME 205	Appl. Mach. Stat. .4
TT 322	Yarn Mfg. II .....5	TT 319	Chemical Testing .2	TT 324	Phys. Testing .....3
	General Elective ....3	TT 317	Dyeing & Finishing 5	TT 321	Weav. & Des. III .5
			General Elective ....3		General Elective ....3

## SENIOR YEAR

ME 307	Applied Mech. Dynamics .....5	EH 304	Tech. Writing .....3	SP 305	Public Speaking ....3
TT 406	Textile Costing .....5	TT 405	Warp Preparation .5	TT 424	Man-Made Fibers .5
	Group Elective .....5	TT 431	Fabric Analysis .....3	TT 412	Textile Mgt. ....3
	General Elective ....3		Group Elective .....5		Group Elective .....5
			General Elective ....3		General Elective ....3

## Total—228 quarter hours

Textile Science students will take the above curriculum plus three of the group electives below in accordance with interest and professional needs. General electives may be selected from approved list on page 167. Six hours of Advanced ROTC may be substituted for six hours of general electives. Substitutions not included on either of these lists may be made with approval of the Department Head.

## APPROVED ELECTIVES

IE 211	Engr. Statistics I .5	ME 428	Air Cond. & Refrig. 5	EE 307	Illum. Engr. ....5
IE 322	Stat. Qual. Control 5	EC 331	Prins. of Marketing 5	AA 304	Meteorology .....5
IL 308	Gages & Measurements .....5	EC 341	Business Law .....5	AT 331	Hist. of Painting & Sculpture .....5
ME 306	Strength of Materials .....5	EC 350	Labor Problems .....5	TT 425	Man-Made Fibers II 5
ME 310	Thermodynamics ....5	EC 436	Bus. Res. Methods .5	CH 207	Organic Chem. ....5
		EC 442	Personnel Mgt. ....5	CH 208	Organic Chem. ....5
		EC 445	Ind. Relations .....5		

# School of Home Economics

MARION SPIDLE, *Dean*

**T**HE SCHOOL OF HOME ECONOMICS offers young people a balanced education. The curriculum includes liberal arts, professional, and technical courses. It offers the student preparation for her role as a homemaker, professional education in one of five major subject matter fields and technical education for highly specialized fields. Students in other schools on campus may elect a minor in any of the fields of Home Economics. All courses are open to both men and women students.

When a student enters college she is assigned an advisor from the Home Economics faculty. The advisor counsels in a private and personal capacity as well as professional and usually serves in this capacity until the student's junior year. Upon choosing a major, the student is assigned an advisor in the field of her specialization. Among other things the advisor helps decide how to wisely use elective hours. Electives may be used to strengthen majors or minors (18 quarter hours) in any field that will develop her capacities and fit her for whatever she may choose to do. Recommended fields for a minor are art, business administration, chemistry, economics, education, foreign languages, journalism and sociology.

In the junior year, each student is required to make a block schedule of the last two years of work, including recommended minors. This outline must be transmitted to the dean before the student registers for the junior year. At this time it is the student's responsibility to reserve a place in one of the Home Management Houses for the appropriate quarter.

A total of 215 credit hours is required for graduation in all majors except Nursing Science. Here the requirement is 162 hours plus residence work in an accredited school of nursing.

The School of Home Economics is divided into subject matter departments. A graduate of this school receives a Bachelor of Science Degree in Home Economics with a major in one of the following:

## **I. Clothing and Textiles**

which leads to fields of work in retailing and styling, journalism, teaching, textile testing and research. The elective hours are planned to provide further training in journalism, business administration, education, chemistry, or other subjects required in these various fields.

## **II. Foods and Nutrition**

which gives the student opportunities to prepare for service as dieticians in hospitals, colleges, public school lunchrooms, in tea rooms and cafeterias: for food production, preparation with commercial firms, and for service in the many social organizations.

## **III. Home Management and Family Economics**

prepares students for positions with Public Utilities, T.V.A., Farmers Home Administration, equipment manufacturers and distributors, and other types of adult education as well as training leaders in all socio-

economic fields covered in Agricultural Extension Service. The program is also designed for full-time homemakers.

#### IV. Family Life and Early Childhood Education

which prepares students for work in fields in which knowledge of child development and skills in guidance are essential, such as: nursery schools, kindergartens, extended school services, child welfare, parent education programs, and guidance of children in the family. A minor in Education qualifies the student for teaching Home Economics.

#### V. Nursing Science

which with three years of work on the campus and satisfactory completion of resident work at an accredited school of nursing leads to a B.S. degree and a certificate of a graduate Registered Nurse. It provides a specially valuable background of knowledge of nutrition and homemaking problems combined with nursing for a student interested in public health.

#### Graduate Work

The School of Home Economics offers work leading to the Master of Science degree and to the professional degree, Master of Home Economics. For further information consult the Home Economics course descriptions and the graduate catalog.

#### Child Study Laboratories

The School of Home Economics provides three laboratories for the study of child development and human relations, two nursery schools for children three to five years of age and a kindergarten for five-year olds. One nursery school meets from 9 a.m. to 12 noon, the other from 9 a.m. to 1 p.m. The kindergarten is in session from 1 to 4 p.m. Children admitted to the child study laboratories are selected from an application list. Applications for enrollment may be placed at the Child Study Center, Auburn University.

### Basic Curriculum for All Freshmen and Sophomores in Home Economics (HE)

#### FRESHMAN YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
EH 101	English Comp. ....5	EH 102	English Comp. ....5	CH 103	General Chemistry ..4
HE 100	Freshman Prob. ....3	HE 102	Basic Foods & Nutr. 5	CH 103L	Gen. Chem. Lab. ..1
HE 104	Related Art ....5	MH 107	College Algebra* ....5	EH 253	Lit. in English ....5
PE 111	Hygiene .....1	PE 112	Hygiene .....1	HE 105	Fund. of Clothing ..5
LY 101	Library Science ....1	PE	Physical Education ..1	PE 113	Hygiene .....1
PE	Physical Education ..1			PE	Physical Education ..1

#### SOPHOMORE YEAR

CH 104	General Chemistry ..4	CH 203	Organic Chem.** or	HE 202	Meal Management ..5
CH 104L	Gen. Chem. Lab. ..1	HY 208	World History .....5	HE 312	Food Science** or
EC 211	Accounting** or	PG 211	Gen. Psychology .....5	HE 233	Home Equip. *** ..5
HE 205	Clothing for the	PS 207	Physics .....5	VM 210	Physiology .....5
	Family .....5	SP 305	Public Speaking .....3	JM 315	Ag. Journalism .....3
SY 201	Sociology .....5	PE	Physical Education ..1	PE	Physical Education ..1
HE 207	Intr. Child Dev. ....3				
PE	Physical Education ..1				

\* MH 107 required of all majors—Fr. for CH 103 and 103L.

\*\* Required of Foods and Nutrition majors only.

\*\*\* HE 215 to be scheduled by Clothing majors.

Suggested minors in Speech, Journalism or combination of both. (Consult your Advisor before scheduling SP 305 or JM 315.)

Public Speaking, Radio, and Television: SP 231, 273, 331 and 337, or 231, 337, 437 and 385. News writing, Reporting, Copyreading and Editing and Feature writing: JM 221, 223, 224 and 322.

Combination minor: JM 221, SP 231, or Workshop, JM 322, SP 337 or SP 305.

## Curriculum for Majors in Clothing and Textiles

## JUNIOR YEAR

## FIRST QUARTER

HE 303	The House .....	5
HE 325	Fund. of Retailing ..	5
VM 311	Bacteriology .....	5
HE 372	Nutr. & Health .....	3

## SECOND QUARTER

EC 200	General Economics ..	5
HE 315	Textiles .....	5
	Social Sc. Elective or	
PG 214	Ed. Psychology .....	5
HE 345	Handicrafts .....	3

## THIRD QUARTER

HE 323	Home Mgt. ....	5
	Elective .....	5
	Prof. Elective .....	5
HE 305	Tailoring .....	3

## SENIOR YEAR

HE 407	Growth & Dev. of	
	Children .....	5
HE 415	History of Textiles ..	5
HE 443	Home Mgt. Res. ....	5
HE 431	Senior Seminar .....	3

HE 425	Hist. of Costume ....	5
HE 435	Textile Testing .....	5
	Prof. Elective .....	5
	Elective .....	3

HE 313	Home Furnishing ....	5
HE 405	Creative Costume	
	Design .....	5
	Prof. Elective .....	5
	Elective .....	3

Electives must be chosen from one field to make a strong minor; suggested minors are Art, Chemistry, Economics, Education, Journalism, or Textile Technology.

HE 335 Retail Training (8 cr.) must be scheduled by students electing to minor in Retailing.

Total—215 quarter hours

## Curriculum for Majors in Foods and Nutrition

## JUNIOR YEAR

## FIRST QUARTER

HE 332	Nutrition & Diet. I ..	5
HE 355	Consumer Textiles ..	3
HY 208	World History .....	5
	Elective .....	5

## SECOND QUARTER

EC 200	General Economics ..	5
HE 342	Nutrition & Diet. II ..	5
HE 352	Inst. Organization ..	3
VM 311	Bacteriology .....	5

## THIRD QUARTER

HE 302	Table Service .....	3
HE 323	Home Management ..	5
HE 402	Diet Therapy .....	5
PG 214	Ed. Psychology or	
	Elective .....	5

## SENIOR YEAR

FL	French or German ..	5
HE 322	Food Preservation ..	3
HE 407	Growth & Dev. of	
	Children .....	5
HE 412	Quantity Food	
	Production .....	5

FL	French or German ..	5
HE 442	Catering .....	3
HE 462	Experimental Foods ..	5
	Elective .....	5

HE 431	Senior Seminar .....	3
HE 432	Cafeteria Mgt. ....	5
HE 443	Home Mgt. Res. ....	5
	Elective .....	5

Total—215 quarter hours

## Curriculum for Majors in Home Management and Family Economics

## JUNIOR YEAR

## FIRST QUARTER

EC 200	General Economics or	
EC 201	Prin. & Problems	
	of Economics .....	5
HE 313	Home Furnishings ..	5
HE 323	Home Management ..	5
HE 355	Consumer Textiles ..	3

## SECOND QUARTER

HE 303	The House .....	5
HE 345	Handicrafts .....	3
VM 311	Bacteriology .....	5
	Ed. Psychology or	
	Soc. Sci. Elective ....	5

## THIRD QUARTER

HE 343	Interior Home	
	Probs. ....	5
HE 372	Nutrition & Health ..	3
HE 407	Child Development ..	5
	Elective .....	5

## SENIOR YEAR

HE 304	Home & Family Life ..	3
HE 322	Food Preservation ..	3
HE 443	Home Management	
	Residence .....	5
HE 453	Consumer and the	
	Market .....	5
	Elective .....	3

HE 401	Extension Organi-	
	zation & Methods ....	5
HE 433	Food Equipment .....	5
HE 463	Family Economics ..	5
	Elective .....	3

HE 353	Community &	
	Family Health .....	3
HE 417	Child Development ..	5
HE 431	Senior Seminar .....	3
	Electives .....	8

Total—215 quarter hours

## Curriculum for Majors in Family Life and Early Childhood Education

JUNIOR YEAR		
FIRST QUARTER	SECOND QUARTER	THIRD QUARTER
HE 303 The House .....5	EC 200 General Economics ..5	HE 313 Home Furnishing ....5
HE 407 Growth & Dev. of Children .....5	HE 417 Guid. of Children ..5	HE 323 Home Mgt. ....5
PG 214 Ed. Psychology .....5	HE 353 Community & Family Health .....3	HE 372 Nutrition & Health ..3
Elective .....3	VM 311 Bacteriology .....5	Soc. Sc. Elective ....5
SENIOR YEAR		
HE 362 Prob. in Comm. Nutrition .....3	HE 431 Senior Seminar .....3	ED 472 Books and Related Materials for Child 4
HE 437 Teach. Meth. in Pre-Primary Ed. ....5	HE 447 Directed Teaching in Pre-Primary Ed. 5	HE 457 Family Relationship 5
HE 443 Home Mgt. Res. ....5	HE 452 Food for the Young Child .....5	Electives .....9
Soc. Sc. Elective ..5	Elective .....5	

Electives must be chosen to build a strong minor in Economics, Education, Psychology, Sociology, Speech, or Journalism.

Total—215 quarter hours

## Curriculum for Majors in Nursing Science (NS)

FRESHMAN YEAR		
FIRST QUARTER	SECOND QUARTER	THIRD QUARTER
HE 100 Freshman Problems 3	CH 103 General Chemistry ..4	CH 104 General Chemistry ..4
HE 102 Basic Foods & Nutr. 5	CH 103L Gen. Chem. Lab. ..1	CH 104L Gen. Chem. Lab. ..1
MH 107 College Algebra .....5	EH 101 English Comp. ....5	EH 102 English Comp. ....5
PE 110 Hygiene .....3	ZY 101 General Zoology .....5	HY 107 United States Hist. 5
PE Physical Education ..1	HY 205 Current Events .....1	LY 101 Library Science .....1
	PE Physical Education ..1	PE Physical Education ..1
SOPHOMORE YEAR		
CH 203 Organic Chemistry ..5	EH 141 Medical Vocabulary 5	EC 200 General Economics ..5
EH 253 Lit. in English .....5	HE 312 Food Science .....5	PS 207 Physics .....5
HE 306 Personal Appearance 3	SP 305 Public Speaking .....3	SY 201 Sociology .....5
VM 220 Human Anatomy & Physiology .....5	VM 221 Human Anatomy & Physiology .....5	Elective .....3
PE Physical Education ..1	PE Physical Education ..1	PE Physical Education ..1
JUNIOR YEAR		
HE 332 Nutr. & Health .....5	HE 342 Nutr. & Dietetics ....5	HE 402 Diet Therapy .....5
HE 452 Food for the Young Child .....5	HE 352 Inst. Organization ....3	HE 417 Guid. of Children ....5
VM 311 Gen. Bacteriology ....5	HE 407 Growth & Dev. of Children .....5	PY 300 Public Health or Elective .....5
Elective .....3	PG 211 Gen. Psychology .....5	Elective .....3

NOTE: Upon satisfactory completion of these three years at Auburn University totaling 162 quarter hours and upon the satisfactory completion of residence work at an accredited school of nursing, the student will be recommended for the B.S. degree.



# School of Military Science

COLONEL A. G. W. JOHNSON

*Commandant and Professor of Military Science*

**S**TUDY OF MILITARY SCIENCE at Auburn University dates back to the Civil War period. The Morrill Land Grant Act of 1862 requires that military instruction be furnished to students. Instruction in Military Science is under the supervision of an officer of the Active Army who is detailed as Professor of Military Science. By appointment of the college authorities he is Commandant of the ROTC students. The Professor of Military Science is assisted by a staff of commissioned and non-commissioned officers of the Army. The curriculum in Military Science is divided into two courses, basic and advanced. A description of course requirements is discussed in the following paragraphs.

## Basic Course

The basic course consists of a six-quarter block of instruction normally taken during the freshman and sophomore years. During the freshman year classroom instruction is taken all in one quarter, three hours per week, accompanied by two hours of drill per week. This course is given in the Fall, Winter, and Spring Quarters, and one credit hour is allowed. In the quarters wherein classroom instruction is not received, the student attends drill two hours per week, and for each quarter successfully completed, one credit hour may be earned.

In the sophomore year four hours of instruction (two classroom and two drill) are taken each week in three quarters, with one credit hour allowed per quarter.

## Advanced Course

The Advanced Course is designed to produce officers for the Army of the United States, both the Active Army and the Reserve. Admission to the Advanced Course is on a best qualified basis. Since the number of applications received usually exceeds the quota allotted to this unit, possession of minimum qualifications does not ensure selection. Successful completion of the Advanced Course at Auburn University qualifies the student for a commission as 2nd Lieutenant in one of the following branches of the USAR: Adjutant General's Corps, Armor, Army Intelligence and Security, Artillery, Chemical Corps, Corps of Engineers, Finance Corps, Infantry, Medical Service Corps, Military Police Corps, Ordnance Corps, Quartermaster Corps, Signal Corps, Transportation Corps, based on student's choice and needs of the Army. Students who are designated Distinguished Military Students may apply for a Regular Army commission, if accomplished prior to graduation and designated as a Distinguished Military Graduate. The advanced course consists of a six-quarter course, normally taken during the junior and senior years, designed to qualify the student for appointment in any of the aforementioned branches. Three credit hours are allowed for each quarter of the advanced course. For limitation on credit allowed toward meeting degree requirements, see engineering

curricula. Students are paid at the rate of 90 cents per day, not to exceed 595 days, while enrolled in the Advanced Course.

A summer camp of six weeks duration must be attended by the student before he becomes eligible for a commission. Summer camp is normally attended during the summer between the end of the junior and the start of the senior years. While attending summer camp students are paid \$78.00 per month. Reimbursement to the students for travel expenses is made at a rate of five cents per mile to and from camp. Uniforms, quarters and rations are furnished by the government during the camp period. The qualifications for the advanced course are:

1. United States citizenship.
2. Be physically qualified in accordance with standards prescribed by the Department of the Army.
3. Not have reached 28 years of age at time of appointment in the U.S. Army Reserve.
4. Have completed appropriate basic training (2 years Basic ROTC) or have equivalent credit in lieu thereof; have at least two (2) academic years to complete prior to graduation.
5. Have minimum overall academic average of 1.0.
6. Be selected by the Professor of Military Science and the President of Auburn University.
7. Execute a written agreement with the Government to complete the two-year Advanced Course training and to attend one Summer Camp (six weeks duration) preferably at the end of the first year of the Advanced Course.
8. Veterans enrolled at Auburn University who have received equivalent credit for six (6) quarters of basic ROTC may apply for the Advanced Course upon completion of the sophomore academic year.

### **Army ROTC Aviation Program**

Certain qualified MS IV cadets may apply for enrollment in the Army ROTC Flight Training Program, subject to quota limitations. This course is conducted at no expense to the student. Participation in the program will not act to cause any reduction in the prescribed MS IV course. The course is an approved CAA standardized flight instruction program consisting of 35 hours ground instruction and 36½ hours flight training. Satisfactory completion of the program of instruction will qualify the graduates for award of a CAA Private Pilot's certificate. Students must agree to an extended period of active duty for three years.

### **Uniforms and Equipment**

All students, both Basic and Advanced, are required to deposit the sum of \$30.00 with the Bursar of the University, prior to enrollment in ROTC. They are then furnished a uniform in good condition and other necessary supplies through the ROTC Supply Office. Upon completion of the ROTC course of instruction, or upon withdrawal of the student therefrom, the uniform and other supplies are turned in and the deposit returned to the student, less \$1.50 per quarter withheld by the Bursar of the University to cover the cost of cleaning and repair of uniforms, when applicable and to support ROTC activities as follows: Scholarship and marksmanship awards;

special apparel and equipment for competitive drill teams and rifle teams; approved travel for drill teams and rifle teams representing Auburn University and rifle teams representing Auburn University ROTC; uniforms for sponsors; the official Military Ball in an amount not to exceed \$.40 per cadet enrolled that quarter.

### **Distinguished Military Students**

The Professor of Military Science may designate as a Distinguished Military Student a person who:

1. Possesses outstanding qualities of leadership, high moral character, and definite aptitude for the military service.
2. Has attained an academic standing in the upper half of his class. An exception may be made only in the case of an individual student whose standing is in the upper 10 per cent of his class in military subjects, or who has shown exceptionally high motivation toward a military career.
3. Has demonstrated his leadership ability through his achievements while participating in recognized campus activities.
4. Has attained a class standing in the upper third of his ROTC class in the Advanced Course, Senior Division, ROTC.

Distinguished Military Students may make application for a commission in the Regular Army any time subsequent to such designation, but not later than the date on which they are designated Distinguished Military Graduates. If accepted they will be commissioned in the Regular Army upon graduation.

### **Distinguished Military Graduates**

The Professor of Military Science may designate as a Distinguished Military Graduate a person who was designated a Distinguished Military Student and who has maintained the high academic standards between the time of such designation and date of commission and graduation.

### **Selective Service Deferments**

Students enrolled in the advanced Army ROTC program will be deferred under the provisions of the Universal Military Training and Service Act, as amended, as follows:

1. Students so deferred are required to sign an ROTC deferment agreement. The provisions of the agreement require the student to complete the basic course, if enrolled therein, to enroll in and complete the advanced course at the proper time, if accepted therefor; and upon completion of the course of instruction therein, to accept a commission, if tendered.
2. The Department concerned will notify the appropriate local Selective Service Board concerning students who have been selected for deferment. Deferment by the local board in such cases is mandatory unless the student has received an order to report for induction. Students dropped from ROTC, not in good scholastic standing, or not considered potential advanced course student, will no longer be deferred.
3. Students who decline to fulfill the terms of their ROTC deferment agreements pertaining to undergraduate work at the institution will be permanently suspended immediately.

# School of Naval Science

CAPTAIN F. L. CURTIS, USN  
*Commanding Officer and Professor of Naval Science*

THE NAVAL RESERVE Officers Training Corps is established under authority of Section 22 of the Act of March 4, 1925, as amended (34 U.S. Code, Sup. 821; Public Law 729, 79th Congress, as amended by Public Law 71 and 381, 80th Congress).

A Captain in the Navy or a Colonel in the Marine Corps is assigned as the Professor of Naval Science. He is assisted by commissioned officers and others detailed from the Navy and Marine Corps.

The purpose of NROTC is to provide a steady supply of well-educated junior officers for the line and staff corps of the Regular Navy and to build up a reserve of trained officers who will be ready to serve their country at a moment's notice in a national emergency. NROTC graduates are given equal rank, equal treatment, and equal opportunities with the graduates of the United States Naval Academy.

## Types of NROTC Students

Students in the NROTC are of three types:

- (a) Regular NROTC Students are appointed Midshipmen, USNR. Such Students assume an obligation to make all required summer practice cruises and upon acceptance of an appointment as a commissioned officer in the U.S. Navy or U.S. Marine Corps serve at the pleasure of the President. The Secretary of the Navy establishes criteria for voluntary termination of an officer's status to meet the needs of the naval service. At the present time the required minimum active duty service period of four years has been established by the Secretary of the Navy.

The Regular program briefly described above is one of the most remarkable educational opportunities ever offered. Public Law 729, signed by the President on 13 August 1946, instituted the selection and training of officer candidates for the Navy and Marine Corps in colleges and universities throughout the country.

For the Regular student the cost of tuition, fees, and textbooks will be paid by the Government. Necessary uniforms will be provided by the Government and students will receive retainer pay for other expenses during college at the rate of \$600 per year. Normally students will attend college for four years. While in college they may take any course leading to a baccalaureate or higher degree except the following: Pre-Medicine, Medicine, Pre-Dental, Dentistry, General Agriculture, Dairy Production, Soils, Wildlife Management, Soil Conservation, Hotel Administration, Anthropology, Pre-Veterinary, Veterinary Medicine, Pre-Theological, Theology, Agronomy, Dairy Manufacturing, Horticulture, Real Estate, Religion, Landscape Architecture, Physical Education, Pharmacy, Music, Art, Law, Poultry Husbandry, Dairy Husbandry, Floriculture, Animal Science, Entomology, Dramatics, Industrial Arts, Animal Husbandry. Regular NROTC students are required to take, in addition to the requirements of their major, 33 quarter hours of Naval Science; they must complete one year of college mathematics and one year of physics by the end of their sophomore year. In those instances where a Regular

NROTC student has received credit at the University for one year of college mathematics, such credit having been established by means of advanced placement tests, the Chief of Naval Personnel will consider that the mathematics requirement has been met. The same type of consideration may be applied to the physics requirement of the Regular NROTC student. Also, in order to strengthen the courses in Principles and Problems of Leadership (NS 412 and NS 413), a minimum of 3 hours in Psychology is required as a prerequisite. Toward meeting this requirement, PG 311 - Behavior of Man, 3 hours, will be scheduled as an additional requirement for all NROTC students to qualify for a commission and must be completed prior to the end of their Junior year. An exception to this rule will be made in the case of NROTC students whose curriculum requires PG 211 - General Psychology, and completion of this course will be considered as meeting requirements as stated above.

They will be required to make two summer cruises and take one summer period of aviation-amphibious indoctrination, lasting from six to eight weeks each, and upon graduation must accept a commission as Ensign, USN, or Second Lieutenant, USMC, if offered. If at the end of four years they do not wish to remain in the regular Navy or Marine Corps, and, in the event of the termination of their commission, they must accept a commission as a Reserve Officer in the United States Navy or the United States Marine Corps, if offered.

Entrance to this Regular program described above is effected through the medium of nation-wide competitive examination given by the Naval Examining Section, during December of each year for selection of NROTC students to enter the Regular program for the following Fall. Application blanks to take the examination and information bulletins describing this program are made available each Fall at all high schools, colleges, and Offices of Naval Officer Procurement. For more complete details, contact the Professor of Naval Science of this university.

- (b) **Contract NROTC** students have the status of civilians who have entered into a mutual contract with the Navy. They are not entitled to the compensation or benefits paid Regular NROTC students except that they are entitled to a uniform issue, payment of commutation of subsistence during their final two years of NROTC training, and practice cruise compensation. Contract NROTC students, if in all respects qualified, are commissioned as Reserve officers in the United States Navy or Marine Corps upon successful completion of the course. They are required to serve on active duty for a period of three years and retain their commission for a total of six years, unless sooner released by the Secretary of the Navy. Students commissioned in the United States Marine Corps may receive commissions as Regular officers, if accepted under current quotas, and will have the same options of service that Regular NROTC students have.

Contract students also will normally remain in college four years. While in the university, a Contract student may take any curriculum which leads to a baccalaureate or higher degree. This does not, however, entitle the student to any delay of active duty requirements after attaining the basic requirements for a baccalaureate degree and commissioning. In addition to the requirements of their major and 33 quarter hours of Naval Science, Contract students must complete satisfactorily by the end of their second year in the program one of the following requirements: (a) Mathematics through trigonometry (in secondary school or college); or (b) One quarter of college mathematics. If a Contract NROTC student has received credit at the University for one quarter of college mathematics, the Chief of Naval Personnel will consider that the mathematics requirement has been met. Contract NROTC students must also meet the same requirement of Psychology as indicated above for Regular

NROTC students. Contract students are required to make only one cruise, normally between the junior and senior years. During this training period, Contract students will be paid as prescribed for enlisted men of the first pay grade of the Navy (\$78 per month at present). During their junior and senior years in the NROTC Program, Contract students are eligible to be furnished commutation of subsistence. The amount of this subsistence is approximately \$27 per month.

- (c) **Naval Science Students:** With the approval of the academic authorities, and with certain exceptions, students disenrolled from the Regular or Contract NROTC programs may be permitted to pursue Naval Science courses for the purpose of fulfilling the University's requirement of six quarters of ROTC. They are not eligible to make NROTC cruises nor to be paid compensation or benefits.

### Equipment

Uniforms, Naval Science textbooks, and other equipment necessary to the Navy program will be furnished by the Government to Regular and Contract students. The uniform will be worn only when engaged in drills or other Naval activities prescribed by the Professor of Naval Science.

## General Qualifications for Enrollment

In general, each candidate for enrollment in the NROTC must meet the following requirements:

1. Be an unmarried male citizen of the United States, never have been married, and agree to remain unmarried until commissioned or disenrolled.
2. Have attained his 17th birthday on or before July first of the year of enrollment and be of such age that he will not have attained his 25th birthday before July first of the year he will be commissioned (i.e., not over 21 on July first for initial enrollment at the beginning freshman level unless contemplating a curriculum which takes five years to complete, in which case he will not have passed the 20th anniversary of his birth on July first for initial enrollment at the beginning freshman level). The Professor of Naval Science is authorized to waive the minimum age requirement for Contract Students of the freshman class in those cases where he considers the student of sufficient maturity to undertake the Naval Science courses and drills.
3. Be morally qualified and possess officer qualifications and character as evidenced by appearance, scholarship, extra-curricular activities, and record in his home community.
4. Be at least a high school graduate or person of equivalent educational level if selected competitively; or be enrolled in good standing and attending an NROTC institution if selected by the Professor of Naval Science.
5. Be physically qualified in accordance with the current manual of the Medical Department requirements for entrance into the Naval Academy.
6. Any person receiving compensation from the United States Veterans Administration for disability incurred in the naval or military service of the United States, or who has any claim pending under the Bureau on account of such disability, is not eligible for enrollment in the NROTC.
7. A citizen of the insular possessions of the United States, unless he has been legally admitted as a citizen of the United States, is not eligible for membership in NROTC.
8. A Contract student who is also a member of a Naval Reserve Unit is entitled to receive payment on account of subsistence and transportation as an



NROTC student concurrently with pay provided for drills performed by a reservist while in an inactive duty status. He may not receive subsistence as a Contract student concurrently with the active or training duty pay of a reservist.

**Selective Service Deferments.** 1. Regular and Contract Students are draft deferred under the Selective Service Extension Act of 1951 from the time of executing their oath of office or contract.

2. NROTC Students dropped from the program become eligible for draft immediately upon separation from the NROTC. In addition, Regular Students are transferred in an enlisted status to the Ready Reserves of the U.S. Naval Reserve to fulfill the remaining period of their six-year military obligation incurred at the time of appointment as Midshipmen, USNR.

3. The Department of Naval Science will keep the appropriate local draft board informed as to the status of each student under paragraphs 1 and 2 above.

4. Students who decline to fulfill the terms of their NROTC deferment agreement pertaining to undergraduate work at the University will be permanently suspended immediately.

**Curriculum.** The Naval Science Curriculum consists of five hours per week for all courses with exception of the sophomore courses which consist of four hours per week. Two hours each week are spent on practical work or drill. The remaining hours per week are spent in classroom work. The Naval Science subjects carried during the four-year curriculum are listed below.

**FIRST YEAR**

1st Qtr. Naval Orientation (NS 111)  
2nd Qtr. Sea Power (NS 112)  
3rd Qtr. Sea Power (NS 113)

**SECOND YEAR**

1st Qtr. Naval Weapons (NS 211)  
2nd Qtr. Naval Weapons (NS 212)  
3rd Qtr. Naval Weapons (NS 213)

**(U. S. N. Candidates)****THIRD YEAR**

1st Qtr. Navigation (NS 311)  
2nd Qtr. Navigation and Introduction to Naval Operations (NS 312)  
3rd Qtr. Naval Operations (NS 313)

**FOURTH YEAR**

1st Qtr. Naval Engineering (NS 411)  
2nd Qtr. Naval Engineering and Introduction to Principles and Problems of Leadership (NS 412)  
3rd Qtr. Principles and Problems of Leadership (NS 413)

**(U. S. M. C. Candidates)****THIRD YEAR**

1st Qtr. Evolution of the Art of War (NS 321)  
2nd Qtr. Evolution of the Art of War (NS 322)  
3rd Qtr. Modern Basic Strategy and Tactics (NS 323)

**FOURTH YEAR**

1st Qtr. Amphibious Warfare Part I (NS 421)  
2nd Qtr. Amphibious Warfare Part II (NS 422)  
3rd Qtr. Leadership, The Uniform Code of Military Justice (NS 423)

Each of the above subjects carries 3 quarter hours of credit, with the exception of the sophomore courses which carry 2 quarter hours of credit. These hours of credit will be cleared as a part of the prescribed quarterly load in which they are taken, with graduation requirements for NROTC students being increased accordingly.

**Distinguished NROTC Graduates.** The Professor of Naval Science may designate as a Distinguished NROTC Graduate any candidate who possesses outstanding qualities of leadership, high moral character, a definite aptitude for the naval service, and who has distinguished himself in his chosen academic major.

In order to qualify for this designation, a candidate must achieve an academic standing in his major field equivalent to "graduation with honor" and must also achieve an equivalent standing in aptitude and Naval Science subjects.

# School of Pharmacy

SAMUEL TERRY COKER, *Dean*

**THE SCHOOL OF PHARMACY** is a member in good standing of the American Association of Colleges of Pharmacy, the object of which is to promote pharmaceutical education. It is also fully accredited by the American Council on Pharmaceutical Education, the object of which is to formulate the educational, scientific and professional principles and standards which approved Schools of Pharmacy are expected to meet and maintain.

**Opportunities in Pharmacy.**—The thorough academic and scientific background provided by the five-year curriculum enables students to pursue a variety of courses. Those interested in business will find retail or wholesale pharmacy suited to their needs, while those with administrative ability are able to go into hospital pharmacy or public health work. If a career in scientific research is desired, the scientific option may be elected by those qualified. Those interested in sales or sales research will find pharmacy an adequate background in qualifying as a sales representative for pharmaceutical manufacturers. Many graduates are in government service as narcotics inspectors, food and drug chemists, and toxicologists. Pharmacy, especially hospital pharmacy, offers a wonderful opportunity for women. These are but a few of the many opportunities that await registered pharmacists of the future.

**The Pharmacy Curriculum.**—The five-year curriculum leading to the degree of Bachelor of Science in Pharmacy is designed to prepare students for the many and varied opportunities available to registered pharmacists. The curriculum also offers opportunity for students to include cultural subjects helpful in preparing for their role in the social, cultural and political life of the community.

Students are admitted to the curriculum in pharmacy by an Admissions Committee after successfully completing with acceptable grades one of the following prescribed pre-pharmacy programs.

1. **The 1-4 Plan**—includes one year of pre-pharmacy, which may be taken in the first year of the School of Pharmacy at Auburn or any accredited institution offering the prescribed courses. Students taking pre-pharmacy at Auburn will be on the 1-4 plan.

2. **The 2-3 Plan**—includes two years of prescribed pre-pharmacy courses at an accredited institution prior to transferring to Auburn. A minimum of nine quarters is then required in the School of Pharmacy.

After completing the third year, students choose either a professional option in preparation for general practice, including hospital pharmacy, or a scientific option in preparation for industry, medical school, research or teaching. The program of each student under either option must be approved by the advisor and those choosing the scientific option must have the approval of the Dean. Both options will adequately prepare students for State Board examinations. It is hoped that these options will motivate the superior student to achieve an educational level consistent with his ability and interests.

Approved electives should be chosen equally between professional or scientific and the liberal arts subjects.

Students who are qualified and have the prerequisites may take up to ten hours of graduate courses in their fourth and fifth years. Such work cannot be applied toward both the undergraduate and graduate degrees. Registration in graduate courses must be approved by the Dean of the Graduate School.

Attention is called to the following regulation of the American Council on Pharmaceutical Education: "No student may graduate from a recognized college or school of pharmacy who has spent less than three scholastic years of nine quarters or six semesters in residence at said college or school." Transfer students will receive no more than 123 quarter hours credit for work completed at this or other institutions in a non-pharmacy curriculum. Students who transfer from colleges or schools of pharmacy approved by the American Council on Pharmaceutical Education will be accepted if they have a 1.0 ("C") average in courses completed at the college or school of pharmacy, as well as an overall average of 1.0 ("C").

Scholarships and Loans.—Information concerning available scholarships and loans may be obtained by contacting the Director of Student Financial Aid, or the Dean, School of Pharmacy, Auburn University.

### Curriculum in Pre-Pharmacy (P-PY)

#### FIRST YEAR

FIRST QUARTER	SECOND QUARTER	THIRD QUARTER
CH 103 General Chemistry .4	CH 104 General Chemistry .4	BY 205 Pharmaceutical Botany .....5
CH 103L Gen. Chem. Lab. .1	CH 104L Gen. Chem. Lab. .1	CH 105 General Chemistry .3
EH 101 English Comp. ....5	EH 102 English Comp. ....5	CH 105L Gen. Chem. Lab. .2
MH 111 Intr. College Math. 5	MH 112 Intr. College Math. 5	HY 107 United States Hist. 5
MS Military Training ....1	MS Military Training ....1	MS Military Training ....1
PE Physical Education .1	PE Physical Education .1	PE Physical Education .1

### Curriculum in Pharmacy (PY)

#### SECOND YEAR

CH 206 Quant. Analysis .....5	EC 200 Gen. Economics .....5	PS 206 General Physics .....5
PY 100 Phar. Convocation* 0	PS 205 General Physics .....5	PY 102 Pharmaceutical Arithmetic .....5
PY 101 Intr. to Pharmacy .3	ZY 101 General Zoology .....5	ZY 102 General Zoology .....5
SY 201 Introduction to Sociology, or	MS Military Training ....1	MS Military Training ....1
PG 211 Gen. Psychology .....5	PE Physical Education .1	PE Physical Education .1
SP 305 Public Speaking ....3		
MS Military Training ....1		
PE Physical Education .1		

#### THIRD YEAR\*\*

CH 207 Organic Chemistry .5	CH 208 Organic Chemistry .5	CH 301 Biochemistry*** .5
EC 211 Intr. Accounting ....5	EH 345 Business & Prof. Writing, or	PY 204 Drug Marketing*** 3
PY 201 Inorganic Pharmaceutical Chemistry .5	EH 390 Advanced Comp. ....5	VM 204 Pathogenic Microbiology .....5
Approved Elective .3	PY 202 Pharmaceutical Terminology .....2	FY 203 Organic Pharmaceutical Chemistry .....5
	VM 200 Gen. Microbiology 5	

\* Required of all Pharmacy students each quarter. Professional topics will be discussed by visiting lecturers, faculty and students.

\*\* Options may be chosen at the beginning of the third year. Advanced ROTC may be used as approved elective.

\*\*\* With consent of the advisor and approval of the Dean, those electing the scientific option may substitute courses of equal credit for these subjects.

FOURTH YEAR		
FIRST QUARTER	SECOND QUARTER	THIRD QUARTER
PY 301 Pharmaceutical Technology I .....5	PY 303 Pharmaceutical Technology II .....5	PY 304 Pharmaceutical Technology III .....5
PY 302 Organic Pharmaceutical Chemistry ..5	PY 306 Pharmacognosy I .....5	PY 307 Pharmacognosy II*** .....5
PY 309 Pharmacology I .....5	Professional Elective 5	PY 300 Public Health .....5
Elective .....3	Elective .....3	Elective .....3
FIFTH YEAR		
PY 400 Disp. Pharmacy I ..5	PY 401 Disp. Pharmacy II ..5	PY 402 Dispensing Pharmacy III*** ....5
PY 408 Pharmaceutical Economics*** .....5	PY 404 Chemistry of Nat. Products .....5	PY 414 Pharmaceutical Specialties*** .....3
PY 407 Chemotherapeutic Drugs .....3	PY 405 Pharmacology II ....5	PY 406 Pharmacology III ....5
PY 415 Pharmaceutical Jurisprudence .....2		Elective .....5

### Total—258 quarter hours

\*\*\* With consent of the advisor and approval of the Dean, those electing the scientific option may substitute courses of equal credit for these subjects.

A list of approved general, professional and scientific electives may be obtained from the advisor or the Dean's office.

Notes: 1. Proficiency in typing required for admission to 5th year.

2. Students are expected to participate in field trips to a pharmaceutical manufacturing plant during their junior or senior year, and to a wholesale drug company during their senior year.

3. A set of Class C Metric and Apothecaries' weights, which may be purchased from Pharmacy Supply, are required for all Pharmacy laboratories.

# School of Science and Literature

ROGER W. ALLEN, *Dean*

THE SCHOOL OF SCIENCE AND LITERATURE is the oldest school of Auburn University and offers work in various lines leading to the Bachelor of Science and Bachelor of Arts degrees. It is the only school on the campus which had its origin when Auburn was a denominational institution. For many years it was known as the Academic Faculty and the work offered was referred to as the General Course. The State of Alabama assumed charge of Auburn in 1872 and the work then offered which is now retained is administered by the School of Science and Literature. Throughout the history of the institution this school has played an important part. It is composed of nine departments in which instruction is offered by more than 175 faculty members.

The School of Science and Literature has a two-fold purpose. As a distinct school coordinate with other schools of the University it offers work designed to equip the student with a broad and liberal education and thereby enable him to care for himself better and to discharge more effectively the duties of a citizen. A second purpose is to function as the service division of the University.

## Degree Courses

The Departments of Economics and Sociology, English, Foreign Languages, History and Political Science, Mathematics, Philosophy, Physics, Secretarial Administration, and Speech are in the School of Science and Literature. In general, the curricula offered in this school are based on various combinations of courses presented by these departments, but in some of the curricula certain courses are required which are offered by other schools of the University.

Outlines of all work required in the curricula in Business Administration, Mathematics, Physics, Applied Physics, Pre-Dentistry, Pre-Law, Pre-Medicine, Pre-Veterinary Medicine, Secretarial Administration, and Science and Literature are recorded in detail on pages 196-202 inclusive.

In the other curricula offered in this school the work required in the freshman and sophomore years is recorded on page 194. During the junior and senior years the student must complete a major of seven five-hour courses and two minors of three five-hour courses each or a double minor of six five-hour courses. Any course to be counted in the major and minors must be numbered 200 or above. Required sophomore courses are not counted on the majors and minors. The work constituting the major must be elected from courses offered by one department or by two closely related departments upon the advice of the dean and the heads of the departments concerned. The work composing each minor must be selected from a single department. The major and minors will normally be selected from different departments, but the double minor will be in one department. Other work will be elected upon advice of the dean to meet the total requirement of 108 quarter hours during the junior and senior years.

The head of the department in which the student majors – or someone designated by him – automatically becomes the student's advisor and is charged with the responsibility of outlining the student's major work. The minors are to be selected in consultation with the head of the department in which the student majors, but the heads of the departments in which the student minors will prescribe the work to be completed in those fields. The outline of the work constituting the major and minors must be transmitted to the dean of the school before the student registers for his junior year of work.

### **A Service Division**

One of the very important functions of the School of Science and Literature is to serve the professional schools on the campus. Whatever curriculum a student may elect, whether it be Engineering, Agriculture, Education, Home Economics, or any other, he must take certain fundamental courses in English, mathematics, history, economics, and sometimes physics, foreign languages, public speaking, journalism, etc. All of these courses at Auburn are offered only in the School of Science and Literature, thereby eliminating unnecessary duplication and saving cost. The student who is preparing to become a professional teacher spends a large portion of his time in this school acquiring a fundamental education in the subject matter which he expects ultimately to teach and in broadening his education in general subjects. He takes his professional work in teacher-training in the School of Education. A student entering Auburn University who has not yet decided what particular vocation he desires to pursue will naturally register in the School of Science and Literature and may, if he so elects, transfer later to a technical school in the institution. Courses in other divisions of the institution are open to election by students registered in the School of Science and Literature.

**Foreign Language.**—In all curricula in this school that require three quarters in a foreign language the work must be in one language.

### **Co-operative Program in Business Administration, Physics and Applied Physics**

Co-operative programs in Business Administration, Physics and Applied Physics are programs of education which offer students in these curricula an opportunity to integrate their academic training with practical experience. Students alternate each quarter between school and a work assignment provided through the Co-operative Coordinator by business, industrial, governmental and banking organizations. For further information, write Director of Engineering Extension, Auburn University.

### **Curriculum in Science and Literature (SL) and Pre-Law (PL)**

Students desiring to pursue a curriculum leading to the degree Bachelor of Arts with majors in English, Journalism, Foreign Language, History, Philosophy, Speech and Sociology; or a curriculum leading to the degree Bachelor of Science with majors in Biological Sciences, Chemistry, Economics, Geography, Mathematics, Physics, and those preparing for Law School should select this curriculum. Prospective majors should consult departmental requirements beginning on page 195. This curriculum is designed to meet the minimum re-



quirements for admission to standard law schools by the end of the sophomore year.

#### FRESHMAN YEAR

FIRST QUARTER			SECOND QUARTER			THIRD QUARTER		
EC 102	Prin. of Geography	..5	EH 101	English Comp.	.....5	EH 102	English Comp.	.....5
HY 107	United States Hist.	5	MH 112	Intr. College Math.	..5	FL	Foreign Language*	5
MH 111	Intr. College Math.	5		Science (ZY 101 or			Science (ZY 102 or	
LY 101	Use of Library	.....1		CH 103, 103L)††	..5		CH 104, 104L)	.....5
MS	Military Training	...1	MS	Military Training	...1	MS	Military Training	...1
PE	Physical Education	..1	PE	Physical Education	..1	PE	Physical Education	..1

#### SOPHOMORE YEAR

FL	Foreign Language	..5	EH 253	Lit. in English	.....5	†EC 200	Gen. Economics	.....5
HY 209	U.S. National Gov't	5	FL	Foreign Language	..5	EH 254	Lit. in English	.....5
SY 201	Intr. Sociology**	.....5	HY 210	U.S. State Gov't	.....5	PG 211	Psychology**	.....5
MS	Military Training	...1	MS	Military Training	...1	MS	Military Training	...1
PE	Physical Education	..1	PE	Physical Education	..1	PE	Physical Education	..1

Women students will take Hygiene in the Freshman year and Current Events in the Sophomore year in lieu of Military Training.

† Economics majors take EC 201.

\* Students who have credit for two high school units in a foreign language must begin the third quarter of work in that language or take another language.

\*\* Science majors will take two quarters of Science here but Sociology and Psychology are to be taken during the Junior or Senior Year.

#### For Science and Literature Students

During the junior and senior years the student not in advanced ROTC is to complete Philosophy 301 (3) and Logic 308 (3), seven additional five-hour courses in his major, three additional five-hour courses in each of two minors, five five-hour electives and four three-hour general electives; 211 quarter credit hours are normally required for graduation. All major and minor courses are to be numbered 200 or above. See available majors and minors below.

#### Language and Literature Majors

##### JUNIOR AND SENIOR YEARS

The majors available in the Language-Literature Groups are as follows: English†, Journalism†, Foreign Language†, Philosophy†, Speech†.

Students who choose one of the above majors will select two minors from the following: Art, Botany, Chemistry, Dramatics, Economics, Education, English, Foreign Languages, Geography, History, Home Economics, Journalism, Mathematics, Music, Philosophy, Physical Education, Physics, Psychology, related subjects in Agriculture or Engineering, Secretarial Administration, Sociology, Speech, Zoology.

#### Science Majors††

##### JUNIOR AND SENIOR YEARS

The majors available in the Science Group are as follows: Biological Sciences, Chemistry, Mathematics†, Physics.

Students who choose a Science Major will select two minors from the following: Art, Botany, Chemistry, Dramatics, Economics, Education, English, Foreign Languages, Geography, History, Home Economics, Journalism, Mathematics, Music, Philosophy, Physical Education, Physics, Psychology, related subjects in Agriculture or Engineering, Secretarial Administration, Sociology, Speech, Zoology.

† For special departmental requirements for English, Journalism, Foreign Language, Philosophy, Speech and Mathematics majors see pages 195 and 196.

†† Majors in Mathematics or Physical Sciences will take CH 103-103L and CH 104-104L.

## Social Science Majors

### JUNIOR AND SENIOR YEARS

The majors available in the Social Science Group are as follows: Economics†, Geography†, History†, Sociology†.

Students who choose one of the above majors will select two minors from the following: Art, Botany, Chemistry, Dramatics, Economics, Education, English, Foreign Languages, Geography, History, Home Economics, Journalism, Mathematics, Music, Philosophy, Physical Education, Physics, Psychology, Secretarial Administration, Sociology, Speech, Zoology, related subjects in Agriculture or Engineering.

### Special Requirements for Departmental Majors

**The English Major.** A fourth quarter of foreign language and HY 472 are required for the English major. In selecting his seven course program of 300-400 courses, the student should work out a balanced program with his English faculty adviser. This program should include: (a) one course from this group: EH 390, 401, 441; (b) three courses selected from different periods, each of the three emphasizing a different type of literature (i.e. fiction, poetry, drama); (c) three survey or period courses dealing with the literature of different ages.

**The Foreign Language Major and Minor.** A minor involves completion of FL 322, 332, or 352. A major requires the completion of seven courses above the one hundred level. These courses may be taken in two or more different languages. The major or minor student should consult the head professor regarding his program.

Students who have completed two or more years of a foreign language in high school should continue that language on the intermediate level. Credit is not granted for an elementary course when the student has pursued that language two years in high school.

**The Journalism Major.** Thirty-six hours of course work in Journalism are required. JM 221, 223, 224, 322 and 421 must be taken by all majors. The additional eleven hours must include either JM 323 or 465 plus JM 422-3 (Journalism Workshop, 6 hrs.) or JM 424 (Journalism Internship, 6 hrs.). Students majoring or minoring in Journalism should consult the professor of Journalism about their programs of study.

**The Philosophy Major and Minor.** A minor must include two historical philosophy courses and one other five-hour philosophy course. A major must include PA 302, 307 or 308, 320, 410, 420, 430, one 400 level course in history, and two five-hour courses in psychology.

**The Speech Major.** The seven required speech courses for a major should be distributed over the six areas of (a) Correction and Voice Science, (b) Group Methods, (c) Fundamentals, (d) Interpretation, (e) Public Address, (f) Radio and Television. SP 229, 231, 241 and at least one course from subject areas b, d and f above must be included.

**The Mathematics Major.** A major in mathematics will consist of the sequences through MH 264 (or MH 301) during the freshman and sophomore

† For special departmental requirements for Economics, History and Sociology majors see page 196.

years. At the beginning of the junior year, the student must consult the department of mathematics on the selection of at least four additional junior and senior level courses to complete the major.

**The Economics Major.** EC 201-2, 245, 360 and 451 must be included in this major.

**The History Major.** A major must include HY 311, 312, 313 and, as a required elective, either PA 410, 420, 430 or 440.

**The Sociology Major.** A major consists of a minimum of 35 hours of sociology courses following SY 201, including SY 202, 203 and 309. In addition in each sociology major EC 245 (Statistics) is required as an elective. The student should consult a member of the sociology staff each quarter of the junior and senior years regarding completion of his major.

### For Pre-Law Students

By the end of the junior year the student preparing for a career in law and desiring to qualify for the A.B. or B.S. degree (awarded at the end of the first year in Law School after completion of three years in this curriculum at Auburn), must have satisfactorily completed Philosophy 301 (3), Logic 308 (3), and the following five quarter-hour courses: Public Speaking 231, Argumentation and Debate 283, Accounting 211, Accounting 212 and History of England 472. In addition, selection from the following five-hour courses is strongly recommended for completion of the Junior year: Typewriting 111\*, Advanced Composition 390, Statistics 345, Corporation Finance 463, Public Finance 465, Political Science 407, Social Problems 202 and Cultural Anthropology 203. Those students wishing to obtain the bachelor's degree at Auburn before entering Law School should continue this curriculum and complete the usual major, minors and electives described above for Science and Literature students.

### Business Administration (BA)

This program is designed to train for careers in the business world and government. During the first two years, emphasis is given to a liberal arts program of work which is so essential to all college graduates. The four-year curriculum gives the student a systematic introduction to and understanding of the major areas of Accounting, Management, Marketing, Finance and Banking, Statistics, Personnel Management, Industrial Relations and Economics. Furthermore, during the junior and seniors years, opportunity is given the student to major or concentrate in a particular area of business, thereby qualifying him for more specialized work in business or government. Business management at top, middle and lower levels, increasingly demands the services of the business administration- and commerce-trained graduate.

#### FRESHMAN YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
EH 101	English Comp. ....5	EH 102	English Comp. ....5	EC 101	Intr. to Business ...5
HY 107	U.S. History ....5	FL 121, 131 or 151, or		FL 122, 132 or 152, or	
MH 111	Intr. College Math. 5	Science (ZY 101 or		Science (ZY 102 or	
LY 101	Use of Library ....1	CH 103) and †† ....5		CH 104) and †† ....5	
MS	Military Training ....1	MH 112	Intr. College Math. 5	SA 111	Typewriting* ....5
PE	Physical Education ...1	MS	Military Training ....1	MS	Military Training ....1
		PE	Physical Education ...1	PE	Physical Education ...1

\* Not open to students having one H.S. unit in typing. In such cases an Economic Group Elective may be substituted.

†† Must include Laboratory.

## SOPHOMORE YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
EC 201	Principles of Economics .....5	EC 202	Economic Problems 5	EC 245	Statistics .....5
EC 211	Intr. Accounting ....5	EC 212	Intr. Accounting ....5	EH 253	Lit. in English .....5
SP 231	Public Speaking .....5	HY 206	U.S. Government ....5	PG 211	Gen. Psychology or
MS	Military Training ....1	MS	Military Training ....1	SY 201	Intr. to Sociology ....5
PE	Physical Education ....1	PE	Physical Education ....1	MS	Military Training ....1
				PE	Physical Education ....1

## JUNIOR YEAR

EC 331	Marketing Principles 5	EC 341	Business Law .....5	EC 350	Labor Problems .....5
EC 300	Business Mgt. ....5		Group Elective .....5	EH 345	Bus. & Prof. Wrtg. ....5
EC 360	Money & Banking ....5		Elective** .....5		Elective** .....5
IPA 301	Intr. to Philosophy 3	IPA 308	Intr. to Logic .....3		Elective .....3

## SENIOR YEAR

EC 465	Public Finance or		Group Elective .....5	EC 463	Corp. Finance .....5
EC 448	Business Cycles .....5		Group Elective .....5		Group Elective .....5
	Group Elective .....5		Elective** .....5		Elective** .....5
	Elective** .....5		Elective .....3		Elective .....3
	Elective .....3				

Total—211 quarter hours

Women students will take Hygiene in the Freshman year and Current Events in the Sophomore year in lieu of Military Training.

† Not required of students in Advanced ROTC Program.

\*\* Electives chosen in consultation with advisor.

## GROUP ELECTIVES

EC 357	Economic History of Europe	EC 450	Job Evaluation and Incentive Systems
EC 358	Economic History of the United States	EC 451	Intermediate Economic Theory
EC 311-12	Intermediate Accounting	EC 452	Comparative Economic Systems
EC 314	Income Tax Accounting	EC 453	Econ. of Growth and Development
EC 321	Property Insurance	EC 460	Economic Development of the South
EC 322	Life Insurance	EC 462	Monetary Theory and Policy
EC 323	Real Estate	EC 464	Investments
EC 332	Credits and Collections	EC 465	Public Finance
EC 333	Salesmanship	EC 471	Foreign Trade
EC 342	Business Law	EC 472	Economics of Transportation
EC 402	American Industries	EC 474	Advanced Statistics
EC 404	Office Management	EC 476	Motor Transportation
EC 411-12	Cost Accounting	EC 480	Business Policies and Administration
EC 414	Adv. Income Tax Accounting	GY 304	Geography of South America
EC 416	Auditing	GY 305	Geography of North America
EC 417-18	Advanced Accounting	GY 306	Geography of Europe
EC 419	Governmental Accounting	GY 307	Geography of Asia
EC 432	Advertising	GY 308	Geography of Africa
EC 433	Retail Store Management	GY 405	Cultural Geography of the World
EC 434	Purchasing	GY 407	World Resources
EC 435	Advanced Marketing	IM 306	Industrial Management
EC 436	Marketing Research Methods	IM 310	Methods Engineering
EC 437	Sales Management	PA 440	American Philosophy
EC 438	Retail Merchandising	PG 461	Industrial Psychology
EC 442	Personnel Management	SA 302	Office Machines
EC 444	Labor Legislation	SY 201	Introductory Sociology
EC 445	Industrial Relations	SY 401	Population
EC 446	Business Cycles	SY 408	Industrial Sociology
EC 449	Adv. Personnel Administration		

## Secretarial Administration (SA)

The course in Secretarial Administration is designed to meet the needs of those who plan to fit themselves for secretarial positions in business, government and professional offices. The program of work outlined leads to the degree of Bachelor of Science.

In order to determine placement in the proper course personal conferences with those students who have had shorthand and typewriting elsewhere will be held during registration.

## FRESHMAN YEAR

## FIRST QUARTER

EC 101	Intr. to Business	.5
EH 101	English Comp.	.5
HY 107	U.S. History	.5
LY 101	Use of Library	.1
PE 111	Hygiene	.1
PE	Physical Education	.1

## SECOND QUARTER

EH 102	English Comp.	.5
MH 111	Intr. College Math.	.5
SA 101	Secretarial Science*	.5
PE 112	Hygiene	.1
PE	Physical Education	.1

## THIRD QUARTER

FL 121, 131 or 151	.....	.5
MH 112	Intr. Col. Math. or	
EH 108	Classical Lit.	.....5
SA 102	Secretarial Science	..5
PE 113	Hygiene	.....1
PE	Physical Education	.....1

## SOPHOMORE YEAR

SA 203	Secretarial Science	.5
EC 200	Gen. Economics or	.5
EC 201	Prin. of Economics	.5
FL 122, 132 or 152	.5	
HY 205	Current Events	.1
PE	Physical Education	.1

EC 211	Intr. Accounting	.5
PG 211	Psychology	.5
SA 204	Secretarial Science	.5
HY 205	Current Events	.1
PE	Physical Education	.1

EC 212	Intr. Accounting	.5
HY 206	U.S. Government	.5
SP 231	Public Speaking	.5
SA 200	Filing	.1
PE	Physical Education	.1

## JUNIOR YEAR

EC 341	Business Law	.5
EC 245	Statistics	.5
SA 302	Office Machines	.5
PA 301	Intr. to Philosophy	.3

SY 201	Intr. Sociology	.5
SA 300	Sec. Procedure	.5
SA 303	Adv. Office Mach.	.5
PA 308	Intr. to Logic or	.3
PA 302	Ethics	.3

SA 301	Dictation	.5
EH 345	Bus. & Professional	.5
	Writing	.5
	Elective	.5
	Elective	.3

## SENIOR YEAR

EC 404	Office Mgt.	.5
	Elective	.5
	Elective	.5
	Elective	.3

EC 442	Personnel Mgt.	.5
SA 401	Dictation	.5
	Elective	.5
	Elective	.3

SA 402	Office Appren-	.5
	ticeship	.5
	Group Elective**	.5
	Group Elective**	.5
	Elective	.3

## Total—211 quarter hours

\* Open to SA majors and others who have had SA 111 or equivalent typing credit.

\*\* Refer to page 197 for Group Electives.

## Mathematics (MH)

This curriculum is designed to prepare students for graduate study and eventual careers as Mathematicians.

## FRESHMAN YEAR

## FIRST QUARTER

EH 101	English Comp.	.5
FL 121	Elem. French**	.5
MH 111	Intr. College Math.	.5
LY 101	Use of Library	.1
MS	Military Training	.1
PE	Physical Education	.1

## SECOND QUARTER

EH 102	English Comp.	.5
FL 122	Elem. French**	.5
MH 112	Intr. College Math.	.5
MS	Military Training	.1
PE	Physical Education	.1

## THIRD QUARTER

EH 108	Classical Literature	.5
FL 221	Inter. French**	.5
MH 161	Anal. Geom. & Cal.	.5
MS	Military Training	.1
PE	Physical Education	.1

## SOPHOMORE YEAR

EH 253	Lit. in English	.5
MH 262	Anal. Geom. & Cal.	.5
PS 201	Mechanics	.5
MS	Military Training	.1
PE	Physical Education	.1

EH 254	Lit. in English	.5
MH 263	Anal. Geom. & Cal.	.5
PS 202	Heat, Lt. & Snd.	.5
MS	Military Training	.1
PE	Physical Education	.1

MH 331	Higher Algebra	.5
MH 264	Anal. Geom. & Cal.	.5
PS 203	Elec. & Magnetism	.5
MS	Military Training	.1
PE	Physical Education	.1

## JUNIOR YEAR

FL 151	Elem. German**	.5
MH 431	Intr. Mod. Algebra	.5
MH 420	Intr. to Analysis	.5
†PA 301	Intr. to Philosophy	.3

FL 152	Elem. German**	.5
HY 207	World History	.5
MH 421	Intr. to Analysis	.5
	Elective	.3

FL 251	Inter. German**	.5
HY 208	World History	.5
MH 422	Intr. to Analysis	.5
	Elective	.3

## SENIOR YEAR

MH 443	Solid Anal. Geom. or	.5
MH 444	Anal. Prof. Geom. or	.5
MH 447	Found. of Geom.	.5
	*Elec. 1 Sequence	.5
	Elective 2	.5
	Elective	.3

PA	Philosophy Elective	.5
	Elec. 1 Sequence	.5
	Elective 2	.5
	Elective	.3

MH 428	Lin. Diff. Systems	.5
	Elec. 1 Sequence	.5
	Elective 2	.5
	Elective	.3

## Total—211 quarter hours

Women students will take Hygiene in the Freshman year and Current Events in the Sophomore year in lieu of Military Training.

† Not required of students in advanced ROTC programs.

\* The order in which these sequences are taken may be interchanged.

\*\* The French sequence may be replaced by 15 hours of Russian. Students who have credit for two high school units in a foreign language must begin the third quarter of work in that language or take another language.

1. These electives are to include any one of the following sequences: (a) PS 305 Introduction to Modern Physics, PS 401 Theoretical Physics I (mech.), PS 402 Theoretical Physics II (mech.), (b) ZY 101, ZY 102 General Zoology, ZY 300 Genetics or BY 401 Prins. of Biometry, (c) BY 101, BY 102 General Botany, ZY 300 Genetics or BY 401 Prins. of Biometry, (d) CH 103, 103L, 104, 104L, and 105, 105L, General Chemistry, or CH 207 Organic Chemistry.

2. The student must consult with the Department of Mathematics on the selection of these electives. They are used to meet the needs and interests of the individual students in line with fulfilling the objectives of this curriculum. They may be taken in the biological, physical or social sciences, literature, languages, history, education or mathematics.

### Physics (PS)

The significant contributions of physics to the advancement of modern industry and technology are reflected in a marked demand for well-trained scientists in the field. Opportunities for a career in this science are to be found in the increasingly active industrial and governmental laboratories as well as on the teaching and research staffs of colleges and universities. The curriculum in Physics is recommended to those who contemplate a career in teaching and/or research, while the curriculum in Applied Physics (see below) should appeal to those whose interests lie primarily in the applied aspects of the subject.

Good laboratory and library facilities are available for advanced studies and research in several fields of modern and classical physics. Current research activities include experimental studies of photonuclear interactions, Beta- and gamma-ray scintillation spectrometry, cosmic radiation, radiation damage, crystal imperfections, gas and solid state lasers, ultrastructure by means of X-ray diffraction and study of the optical properties of biophysical media, Mossbauer effect, quadrupole focusing of positive and negative ions, and magneto-optics. In addition theoretical investigations are presently being conducted in molecular physics, operation methods in quantum mechanics, classical mechanics, classical and quantum statistics, and crystal imperfections.

### FRESHMAN YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
CH 111	Chemistry .....5	CH 112	Chemistry .....5	CH 113	Chemistry .....5
HY 107	U.S. History .....5	EH 101	English Comp. ....5	EH 102	English Comp. ....5
MH 160	Intr. College Math.* 5	MH 161	Anal. Geom. & Cal. 5	MH 262	Anal. Geom. & Cal. 5
LY 101	Use of Library .....1	MS	Military Training ....1	MS	Military Training ....1
MS	Military Training ....1	PE	Physical Education ..1	PE	Physical Education ..1
PE	Physical Education ..1				

### SOPHOMORE YEAR

EH 253	Lit. in English .....5	FL 121	Elem. French** .....5	FL 122	Elem. French** .....5
MH 263	Anal. Geom. & Cal. 5	MH 264	Anal. Geom. & Cal. 5	MH 361	Diff. Equations .....5
PS 201	Mechanics .....5	PS 202	Heat, Sound, Light 5	PS 203	Elec. and Mag. ....5
MS	Military Training ....1	MS	Military Training ....1	MS	Military Training ....1
PE	Physical Education ..1	PE	Physical Education ..1	PE	Physical Education ..1

### JUNIOR YEAR

FL 151	Elem. German** .....5	FL 152	Elem. German** .....5	CH 206	Quant. Analysis .....5
MH 402	Eng. Math. I .....5	PS 302	Electronics .....5	PS 305	Modern Physics .....5
PS 301	Intr. Elec. & Mag. .5		Elective*** .....5		Group Elective .....5
	Elective .....3		Elective .....3		Elective .....3

### SENIOR YEAR

CH 407	Physical Chemistry .5	CH 408	Physical Chemistry .5	PS 404	Thermodynamics .....5
PS 401	Theoretical Phys. I 5	PS 303	Optics .....5		Group Elective .....5
PS 405	Nuclear Physics .....5	PS 402	Theoretical Phys. II 5		Elective .....5
	Elective .....3		Elective .....3		Elective .....3

### Total—211 quarter hours

Women students will take Hygiene in the Freshman year and Current Events in the Sophomore year in lieu of Military Training.

\* Only five hours credit allowed toward graduation for MH 111-112 if sequence MH 111-112 is taken instead of MH 160.

\*\* Students who have credit for two high school units in a foreign language must begin the third quarter of work in that language or take another language.

\*\*\* Students planning to do graduate work should elect MH 404.



## GROUP ELECTIVES

MH 403-4 Engineering Mathematics II and III	PS 410 Introduction to Reactor Physics II
MH 460 Numerical Analysis I	PS 413 Introduction to X-Ray Crystallography
PS 304 Applied Spectroscopy	PS 414 Electron Optics & Microscopy
PS 409 Introduction to Reactor Physics I	PS 421 Advanced Electronic Circuits

## Applied Physics (APS)

This curriculum provides a thorough foundation in physics and sufficient training in mathematics and related sciences to enable the graduates to enter industrial and governmental research laboratories. Many graduates in this curriculum elect to pursue further training for advanced degrees in Physics.

During the junior and senior years, thirty-five quarter hours are designated as technical electives. At least twenty of these quarter hours are to be taken in one related science. The remaining fifteen quarter hours may be chosen from courses not required in physics, mathematics, or the related science.

Following the curriculum outline is a list of technical electives in the related sciences.

## FRESHMAN YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
CH 111 Chemistry	5	CH 112 Chemistry	5	CH 113 Chemistry	5
HY 107 U.S. History	5	EH 101 English Comp.	5	EH 102 English Comp.	5
MH 160 Intr. College Math.*	5	MH 161 Anal. Geom. & Cal.	5	MH 262 Anal. Geom. & Cal.	5
LY 101 Use of Library	1	EG 102 Eng. Drawing	2	IL 103 Mach. Tool Lab.	1
MS Military Training	1	MS Military Training	1	MS Military Training	1
PE Physical Education	1	PE Physical Education	1	PE Physical Education	1
	18		19		18

## SOPHOMORE YEAR

EH 253 Lit. in English	5	ME 307 Dynamics**	5	ME 306 Strength of Matls.*	5
MH 263 Anal. Geom. & Cal.	5	MH 264 Anal. Geom. & Cal.	5	MH 361 Diff. Equations	5
PS 201 Mechanics	5	PS 202 Heat, Lt., & Snd.	5	PS 203 Elec. & Mag.	5
MS Military Training	1	MS Military Training	1	MS Military Training	1
PE Physical Education	1	PE Physical Education	1	PE Physical Education	1
	17		17		17

## JUNIOR YEAR

MH 402 Eng. Math. I	5	PS 305 Modern Physics	5	PS 302 Electronics	5
PS 301 Inter. Electricity	5	PS 404 Thermodynamics	5	PS 303 Optics	5
& Magnetism	5	EE 331 Circuit Analysis I	5	Technical Elective	5
***Technical Elective	5	****Elective	3	****Elective	3
	15		18		18

## SENIOR YEAR

PS 401 Theoretical Phys. I	5	PS 402 Theoretical Phys. II	5	PS 413 X-rays & Crys.	5
PS 405 Nuclear Physics	5	Technical Elective	5	Struc.	5
Technical Elective	5	Technical Elective	5	Technical Elective	5
****Elective	3	****Elective	3	Technical Elective	5
	18		18	****Elective	3

## Total—211 quarter hours

\* Only 5 hours of credit are allowed toward graduation for MH 111-112 if the sequence MH 111-112 is taken instead of MH 160.

\*\* Students taking related courses in chemistry will take CH 207 (Organic Chemistry) instead of ME 307 and CH 208 (Organic Chemistry) instead of ME 306.

\*\*\* Students taking advanced ROTC may schedule their military courses within the fifteen hours of free electives and one of the technical electives.

\*\*\*\* Students anticipating graduate work should use 10 hours of technical electives and an equal number of free electives to complete at least 10 hours in each of two foreign languages: French, German or Russian. Otherwise, his free elective credits (up to 15 hours) should be earned in the areas of Philosophy, Literature, History, the Social Sciences or the Fine Arts.

## TECHNICAL ELECTIVES

In parenthesis following a course title are numbers indicating when the course should be taken. Examples: (3-2) means the course should be taken during the junior year in the second quarter.

AE 301 Basic Aerodynamics .....	5	ME 202 Materials of Engineering .....	3
AE 404 High Speed Aerodynamics .....	5	ME 206 Properties of Materials .....	3
AE 413 Theoretical Aerodynamics .....	5	ME 313 Fluid Mechanics .....	(3-3) 5
CH 206 Quant. Analysis .....	(3-3) 5	ME 335 Metallurgy .....	5
CH 305 Organic Chemistry .....	5	ME 421 Heat Transfer .....	(4-1) 5
CH 407 Physical Chemistry .....	(4-1) 5	ME 441 Engineering Systems I .....	(4-2) 5
CH 408 Physical Chemistry .....	(4-2) 5	ME 442 Engineering Systems II .....	(4-3) 5
CH 409 Physical Chemistry .....	5	MH 404 Engineering Mathematics III .....	5
CH 410 Intermediate Inorganic Chem. (3-1) 5		MH 428 Linear Differential Systems .....	5
CH 412 Chemical Thermodynamics .....	5	MH 460 Computer Systems .....	5
EE 332 Circuit Analysis .....	(3-3) 5	PS 304 Applied Spectroscopy .....	5
EE 430 Radio Transmission Line .....	(4-1) 5	PS 409 Intr. to Reactor Physics I .....	5
EE 442 Ind. Electronics and Control Cir. ....	5	PS 410 Intr. to Reactor Physics II .....	5
EE 443 Transistor Electronics .....	5	PS 414 Electron Optics .....	5
EE 444 Fund. of Digital Computers .....	5	PS 470 Health Physics .....	5
EE 445 Nuclear Instrumentation .....	5		
EE 448 Communications Eng. II .....	(4-2) 5		

## Curriculum in Pre-Professional Science

For Students in Pre-Medicine (PM), Pre-Dentistry (PD) and Pre-Veterinary Medicine (PV)

The first two years of this curriculum meet the minimum course requirements for admission to the Auburn School of Veterinary Medicine. Refer to page 203 for particulars. Standard schools of dentistry and medicine require at least two and three years, respectively. Each student is urged to continue an additional one or two years beyond the bare minimum demands of the professional school of his choice, however. The Bachelor of Science degree is awarded to those completing the four-year curriculum before entering professional school. Students admitted to dental, medical or veterinary medical school before graduation, but after having completed the first three years of this curriculum at Auburn and including General Chemistry 105 and 105L, may transfer credits for the first year in professional school back to Auburn and receive the B.S. degree.

## FRESHMAN YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
EH 101 English Comp. ....	5	CH 103 General Chemistry ..	4	CH 104 General Chemistry ..	4
MH 111 Intr. College Math. 5		CH 103L Gen. Chem. Lab. ..	1	CH 104L Gen. Chem. Lab. ..	1
ZY 101 Zoology .....	5	EH 102 English Comp. ....	5	HY 107 U.S. History .....	5
LY 101 Use of Library .....	1	ZY 102 Zoology .....	5	MH 112 Intr. College Math. 5	
MS Military Training ....	1	MS Military Training ....	1	MS Military Training ....	1
PE Physical Education ..	1	PE Physical Education ..	1	PE Physical Education ..	1

## SOPHOMORE YEAR

BY 101 General Botany .....	5	CH 207 Organic Chemistry ..	5	CH 208 Organic Chemistry ..	5
PS 205 Physics .....	5	PS 206 Physics .....	5	EH 141 Medical Vocab. ....	5
CH 105 General Chemistry ..	3	HY 206 U.S. Government ..		PS 210 Physics .....	
CH 105L Gen. Chem. Lab. ..	2	or		or	
or		PH 202 Veterinary Poul.* ..	5	AH 204 Animal Nutrition* ..	5
AH 200 Intr. An. Husb.* ....	5	MS Military Training ....	1	MS Military Training ....	1
MS Military Training ....	1	PE Physical Education ..	1	PE Physical Education ..	1
PE Physical Education ..	1				

\* To be taken by pre-veterinary students but not by pre-medical or pre-dental students.

Women students will take Hygiene in the Freshman year and Current Events in the Sophomore year in lieu of Military Training.

## JUNIOR YEAR

## FIRST QUARTER

EH 345	Business and Prof.	
	Writing .....	5
FL 151	German** .....	5
ZY 301	Comp. Anatomy .....	5
1PA 301	Intr. to Philosophy	3
HY 305	Current Events***	..1

## SECOND QUARTER

CH 206	Quant. Analysis .....	5
FL 152	German** .....	5
SY 201	Sociology .....	5
1PA 308	Intr. to Logic .....	3
HY 305	Current Events***	..1

## THIRD QUARTER

CH 316	Physical Chemistry ..	5
FL 251	German** .....	5
ZY 302	Vertebrate Embry. ..	5
	Elective .....	3
HY 305	Current Events***	..1

## SENIOR YEAR

EC 200	Gen. Economics .....	5
	Group Elective .....	5
	Group Elective .....	5
	Elective .....	3

PG 211	General Psychology	5
	Group Elective .....	5
	Group Elective .....	5
	Elective .....	3

SP 231	Public Speaking .....	5
	Group Elective .....	5
	Group Elective .....	5
	Elective .....	3

Total—211 quarter hours

\*\* Students who have credit for two high school units in German must begin the third quarter's work in that language or take another language.

\*\*\* Not required for graduation but urged in preparation for Medical and Dental Aptitude tests. Three quarters of Current Events recommended throughout Junior year and may be used in place of a three-hour elective.

‡ Not required of students in Advanced ROTC Program.

## GROUP ELECTIVES

CH 301	Biochemistry
CH 305	Organic Chemistry
EC 341-2	Business Law
EH 253	Literature in English
EH 357-8	American Literature
FL 252	Intermediate German
HY 207-8	World History
MH	Advanced Mathematics
PG 435	Abnormal Psychology

SY 301	Sociology of the Family
SY 304	Minority Groups
VM 200	General Microbiology
VM 220-1	Human Anatomy and Physiology
ZY 300	Genetics
ZY 308	Micrology
ZY 404	Medical Entomology
ZY 409	Histology

# School of Veterinary Medicine

J. E. GREENE, *Dean*

THE SCHOOL OF VETERINARY MEDICINE offers a fully accredited program of training leading to the degree of Doctor of Veterinary Medicine. The curriculum requires four years in the professional school after completion of at least two years of the pre-professional course.

## Admission

Two years of general college work, with a minimum scholastic average of 1.25 on all required courses, is required for admission. A grade of D on any required course will not be accepted. The Committee on Admissions of the School of Veterinary Medicine may require a personal interview with any applicant and may also require a reading comprehension test, or an examination on any required course. The School of Science and Literature offers a two-year Pre-Veterinary Medicine Curriculum which is available to residents of Alabama. Applications for admission to the pre-veterinary course should be made directly to the Admissions Officer, Auburn University.

Residents of states other than Alabama should complete the pre-professional requirements at institutions within their home state, since they are not eligible for admission to the pre-professional curriculum at Auburn University. Such work should include 10 quarter hours of inorganic chemistry, 10 quarter hours of organic chemistry, 10 quarter hours of physics, 5 quarter hours of botany, 10 quarter hours of zoology, 10 quarter hours of English Composition, 10 quarter hours of introductory college mathematics, 5 quarter hours of poultry science, 5 quarter hours of animal nutrition, 5 quarter hours of introductory animal science, 5 quarter hours of American history, and 5 quarter hours of medical vocabulary. Ten quarter hours of Latin or modern language may be substituted for medical vocabulary, or this course may be taken through the Correspondence Study Department, Auburn University. Three semester-hour courses will be accepted as the equivalent in subject-matter content of five quarter-hour courses.

Admission to the School of Veterinary Medicine must be gained through formal application not less than four months in advance of entrance date. Applications will be considered from students who submit evidence of satisfactory completion of all requirements. Students will be admitted at the beginning of the fall quarter.

**Admission under the Regional Plan.**—Under the Regional Plan for Veterinary Training, the School of Veterinary Medicine serves six states—Alabama, Florida, Kentucky, Louisiana, Mississippi and Tennessee. While there is no limit on the number of applications, the School's facilities make it necessary to restrict admissions to 75 new students each year—32 from Alabama and a fixed share of the other 43 from each of the other five participating states.

The Land-Grant Institution in each state participating under the Southern Regional Education plan maintains a counseling and guidance service for students desiring admission to the School of Veterinary Medicine. Students

attending other than Land-Grant Institutions of the several states should contact the counseling and guidance service for information and advice concerning courses which will be acceptable in the pre-veterinary curriculum. Inquiries should be made early and addressed to:

Alabama:	Dean, School of Science & Literature Auburn University Auburn, Alabama
Florida:	Dean, College of Agriculture University of Florida Gainesville, Florida
Kentucky:	Associate Dean, School of Agriculture and Home Economics University of Kentucky Lexington, Kentucky
Louisiana:	Head, Department of Veterinary Science Louisiana State University Baton Rouge, Louisiana
Mississippi:	Dean, School of Agriculture Mississippi State University State College, Mississippi
Tennessee:	Dean of Resident Instruction College of Agriculture University of Tennessee Knoxville, Tennessee

The procedure for making application for admission to the School of Veterinary Medicine under the Regional Plan varies in the several states. An officer, or board, in each state certifies applicants as to residence and evaluates the courses completed. Courses acceptable in the degree program at the State Land-Grant Institution will be considered acceptable in the Auburn University pre-veterinary program. An applicant who wishes to be included in his state's list of eligibles for entrance into the School of Veterinary Medicine should send his completed application together with three letters of recommendation and a transcript covering all college work completed to the appropriate address as indicated below:

Alabama:	Dean, School of Veterinary Medicine Auburn University Auburn, Alabama
Florida:	Secretary Board of Control for Fla. Institutions of Higher Learning Tallahassee, Florida
Kentucky:	Chairman, Committee on Regional Veterinary Training University of Kentucky Lexington, Kentucky

Louisiana:	Chairman, Certification Committee Louisiana State University Baton Rouge, Louisiana
Mississippi:	Executive Secretary Board of Trustees for Institutions of Higher Learning State Capitol Jackson, Mississippi
Tennessee:	Committee on Regional Veterinary Training University of Tennessee Knoxville, Tennessee

The final selection of students to be admitted is made by the Committee on Admissions of the School of Veterinary Medicine, Auburn University. These selections are made from the applicants who have been certified by the committees in the respective states after giving due consideration to scholastic record and general adaptability for the profession. The right is reserved to accept or reject any applicant. All applications for admission must be on file at the School of Veterinary Medicine by May 1 preceding date of admission.

**Microscopes.** — In order to be admitted to the School of Veterinary Medicine, students must own a compound microscope acceptable to the faculty. Students must furnish a microscope in all courses requiring the use of this instrument. Microscopes may be purchased through the Book Store of Auburn University.

### **Scholastic Requirements**

Students enrolled in the School of Veterinary Medicine who make a scholastic average less than 1.25 for any two quarters of one academic year may be dropped from the School of Veterinary Medicine for scholastic deficiency. Students who make a grade of "F" on any course may be required to withdraw from the School of Veterinary Medicine until such time as the course is offered again. Such students may be required to repeat certain other courses in the curriculum for that quarter.

Students who are dropped under the above provisions are eligible for admission to other curricula provided they meet the University scholastic requirements for continuation in residence. The scholastic penalties incurred while enrolled in the School of Veterinary Medicine will become a part of the student's record.

### **Veterinary Curriculum**

Below are the subjects required for each of the four years in the School of Veterinary Medicine.

Fourth-year veterinary students will be required to continue in school during the Summer, Fall and Winter quarters. Following completion of the three quarters of senior academic work, each student will be required to serve an internship of one quarter with a reputable practicing veterinarian. A certificate of satisfactory completion of this internship will be required for graduation.



## Curriculum in Veterinary Medicine (VM)

## FIRST YEAR

## FIRST QUARTER

VM 320	Anatomy .....	5
VM 326	Histology .....	5
VM 330	Gen. Microbiology ..	5
VM 333	Zootechnics .....	3

## SECOND QUARTER

VM 321	Anatomy .....	5
VM 327	Organology .....	5
VM 331	Inf. & Immunity .....	5
VM 329	Physiology .....	3

## THIRD QUARTER

VM 322	Anatomy .....	5
VM 324	Veterinary Genetics ..	3
VM 328	Embryology .....	5
VM 336	Physiology .....	5
VM 334	Zootechnics .....	2

## SECOND YEAR

VM 436	Pharmacology .....	5
VM 443	Physiology .....	5
VM 450	General Pathology ..	5
VM 456	Parasitology .....	3

VM 437	Pharmacology .....	3
VM 444	Physiology .....	5
VM 451	Systemic and Special Pathology ..	5
VM 457	Parasitology .....	5

VM 438	Pharmacology .....	5
VM 452	Clinical Pathology ..	3
VM 458	Parasitology .....	3
VM 453	Systemic and Spec. Pathology .....	2
VM 461	Pathogenic Microbiology .....	5

## THIRD YEAR

VM 500	Vet. Medicine .....	5
VM 510	Small Animal Med. ..	5
PH 422	Avian Diseases .....	5
VM 526	Physical Diag. & Clinical Technique ..	2
VM 528	Applied Anatomy .....	2

VM 501	Vet. Medicine .....	5
VM 503	General Surgery .....	3
VM 521	Milk Sanitation .....	5
VM 527	Physical Diag. & Clinical Technique ..	2
VM 530	Radiology & Radiation Biology ..	5
VM 531	Jurisp. & Ethics .....	1

VM 502	Vet. Medicine .....	5
VM 504	Large Animal Surgery .....	5
VM 512	Small Animal Surgery .....	5
VM 519	Sm. An. Medicine .....	3
VM 508	Large Animal Clinic ..	1
VM 518	Small Animal Clinic ..	1

## FOURTH YEAR

VM 551	Jurisp. & Ethics .....	1
VM 554	Vet. Medicine .....	3
VM 557	Applied Anatomy .....	1
VM 560	Obstetrics .....	5
VM 575	Meat Sanitation .....	5
VM 562	Large Animal Sur- gery & Ob. Ex. ....	1
VM 572	Sm. An. Surg. Ex. ....	1
VM 566	Large Animal Clinic ..	2
VM 576	Small Animal Clinic ..	2

VM 552	Jurisp. & Ethics .....	1
VM 555	Infectious Diseases ..	5
VM 561	Vet. Medicine .....	5
VM 563	Large Animal Sur- gery & Ob. Ex. ....	1
VM 573	Sm. An. Surg. Ex. ....	1
VM 567	Large Animal Clinic ..	2
VM 577	Small Animal Clinic ..	2

VM 556	Infectious Diseases ..	5
VM 558	Applied Anatomy .....	1
VM 582	Seminar .....	3
VM 588	Veterinary Medicine ..	5
VM 564	Large Animal Sur- gery & Ob. Ex. ....	1
VM 574	Sm. An. Surg. Ex. ....	1
VM 568	Large Animal Clinic ..	2
VM 578	Small Animal Clinic ..	2

Total—228 quarter hours

(See page 201 for Pre-Veterinary Medicine requirements.)

## Graduate Requirements

School of Veterinary Medicine master's degree candidates may be required to pass a preliminary oral or written examination to demonstrate adequate knowledge in their chosen fields. They must meet the general requirements for admission into the Graduate School. See Graduate School section of this catalog, memoranda issued by the School, and the Graduate School Catalog.

# The Graduate School

W. V. PARKER, *Dean*

W. S. BAILEY, *Associate Dean and Coordinator of Research*

**A**LL REGULATIONS governing the Graduate School are designed to equal or exceed the minimum standards recommended by the Commission on Colleges and Universities of the Southern Association of Colleges and Secondary Schools.

A student with a bachelor's degree from an accredited college or university may apply to the Dean of the Graduate School for admission. Application for admission, the form for which may be secured from the Graduate School, must be accompanied by a transcript of undergraduate credits. It must be received at least three weeks before registration. Every applicant must have a satisfactory undergraduate record and show adequate preparation in the field in which he desires to major as determined by the screening committee of the school or department concerned.

The Graduate School bulletin should be consulted for detailed information on the regulations of the Graduate School, the courses offered for graduate credit, the requirements for degrees, fellowships and assistantships, and other matters pertaining to graduate work in this institution. Undergraduates wishing to register for graduate courses should consult this bulletin for regulations concerning such registration. A bulletin may be obtained upon request from the Dean of the Graduate School.

The Graduate School administers graduate work leading to the degrees listed below.

## The Master's Degree Program

**Master of Science** in the areas of Aerospace Engineering, Agricultural Economics, Agricultural Education, Agricultural Engineering, Agronomy, Animal Science, Animal Nutrition, Botany, Business Administration, Chemical Engineering, Chemistry, Civil Engineering, Dairy Manufacturing, Dairy Production, Education, Electrical Engineering, Entomology, Fisheries Management, Forestry, Game Management, Home Economics, Horticulture, Mathematics, Mechanical Engineering, Nuclear Science, Ornamental Horticulture, Pharmacy, Physics, Poultry Science, Psychology, Radiological Sciences, Veterinary Medicine, and Zoology.

**Master of Arts** in the areas of English, History, and Speech.

**Other Master's Degrees:** Master of Agriculture, Master of Agricultural Education, Master of Fine Arts, Master of Building Construction, Master of Business Administration, Master of Education, Master of Home Economics.

## The Specialist in Education Program

**Specialist in Education** in the areas of Curriculum, Teaching, Administration, Supervision, and Guidance.

## The Doctoral Degree Program

**Doctor of Education** in the areas of School Administration, Supervision and Guidance; and Curriculum and Teaching.

Doctor of Philosophy in the Departments of Agronomy and Soils, Animal Science, Botany and Plant Pathology, Chemistry, Electrical Engineering, English, Mathematics, Mechanical Engineering, Physics, Poultry Science, and Zoology-Entomology, and an interdisciplinary program in Agricultural Engineering.

## Research Program at the Oak Ridge Institute of Nuclear Studies

Auburn University is one of the sponsoring institutions of the Oak Ridge Institute of Nuclear Studies located at Oak Ridge, Tennessee. Through this cooperative association with the Oak Ridge Institute our graduate research programs have at their disposal the facilities of the National Laboratories in Oak Ridge and the research staffs of these laboratories. When advanced degree candidates in certain areas have completed their resident work at Auburn it is possible, by special arrangement, for them to go to Oak Ridge to do their research problems and prepare their theses. In addition, it is possible for our faculty members to obtain appointments on the Oak Ridge Research Participation Program for varying periods, usually not less than three months, in order to pursue advanced studies in their fields of specialization. Thus, both faculty and students may keep abreast of the most modern and up-to-date developments in atomic and nuclear research that is in progress at the Oak Ridge Laboratories.

The students will go to Oak Ridge on Oak Ridge Graduate Fellowships. The stipend will be determined by the number of dependents of the student and by the level of work which he is prepared to do. Faculty members may work in Oak Ridge on stipends commensurate with their current college salary and rank.

Information on the opportunities for research in the Oak Ridge Laboratories is available in the office of the Dean of the Graduate School.

## Grant-in-Aid Research Program

The Grant-in-Aid Program has for its purpose the stimulation of campus-wide interest and activity in basic research among the faculty and, indirectly, the upgrading and vitalizing of teaching on advanced levels of instruction. Funds made available by the University Administration are granted to faculty members in support of worthy research projects which as a rule have already been initiated and require only modest sums for their completion. Applications for grants are evaluated carefully by the Research Grant-in-Aid Committee. The Committee makes recommendations to the Dean of the Graduate School who presents the applications to the President for final approval.

## Nuclear Science Center

Construction of a Nuclear Science Center is scheduled to begin soon. This facility will provide research and teaching space for use by all Departments for work in all phases of the pure and applied aspects of the nuclear science

field. It is expected that work will be done in the areas of agriculture, chemistry, engineering, home economics, pharmacy, physics and veterinary medicine.

## Auburn Computer Center

NATHANIEL MACON, *Director*

The Auburn Computer Center, established in 1959, is administered by the Graduate School. The Center currently is equipped with an IBM Model 1620 computer, which is to be replaced in 1964 with an IBM Model 7040 computer. The facilities of the Center are available to students and faculty for use in instructional and research programs. Persons interested in the use of the facilities should contact the Director for information on policies regarding charges for computer time and to arrange for use of the computer facilities.

# Description of Courses by Departments

This section contains all courses offered in the University, listed by departments, arranged in alphabetical order.

Courses bearing the numbers from 000 to 099 inclusive are remedial courses carrying no degree credit; those bearing the numbers 100 to 199, inclusive, are normally offered for freshmen; those from 200 to 299, sophomores; 300 to 399, juniors; 400 to 499, seniors; 500 to 599, fifth year students; 600 to 699, graduate students; and 700, doctoral candidates.

Description of courses in each department includes: (a) course number; (b) descriptive title; (c) in parentheses, credit in quarter hours i.e. one quarter (5), two quarters (5-5), etc.; (d) lecture and laboratory hours for courses with laboratory (where no statement is made the course consists of lecture periods equal in number to course credit); (e) the quarter in which the course is offered; (f) prerequisite (Pr.); (g) description of subject matter and method.

Preceding the description of courses for each department is a list of the departmental faculty.

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## General Elective Courses

Courses listed below are of non-technical and cultural nature offered as lecture and reading courses with three credits per quarter, for use primarily as electives in the junior, senior, and fifth years. With the approval of the dean they may be used as general electives elsewhere in the curriculum.

**AF Advanced Air Science (3). Lec. 4, Drill 2.**

For students selected.

**AR 360. Appreciation of Architecture (3). Pr., sophomore standing. (Not open to AR and ID students.)**

Survey of architectural development with particular attention to American and contemporary examples. Illustrated lectures, readings, essays.

**AR 370. Spaces of Living (3). Pr., junior standing. (Not open to AR and ID students.)**

Survey of contemporary concepts of design, spatial organization, materials, furnishings, and gardens in relation to all major types of residential architecture. Illustrated lectures, readings, reports.

**AT 332. American Painting and Sculpture (3).**

Survey of American art and artists from the Colonial period to the present day. Illustrated lectures, readings.

**AT 431. Contemporary Art (3).**

Survey of modern painting, sculpture, and industrial design. Illustrated lectures, readings.

**BY 308. Plants and Man (3). Lec. 3. Summer.**

Brief introduction to the botanical characteristics of most categories of plants including their kinship, origin, past and present distribution, and various ways utilized, as timbers, fruits and other foods, fibers, forage, ornamentals, drugs, etc. Local field trips will be made. (Restricted to students who have no more than 5 hours credit in Botany.)

**CH 342. Geology (3). Pr., CH 104 or sophomore standing.**

General geology.

**DR 313. Drama Appreciation I (3). (Not open to Drama majors.)**

Survey of the theatre and stagecraft from early times to the present day, emphasizing the social and artistic position of the stage in each civilization. Illustrated lectures, readings.

**DR 314. Drama Appreciation II (3). (Not open to Drama majors.)**

Survey of contemporary plays and productions, aimed to make theatre-going intelligent fun.

**DR 350. Sound for the Theatre (3). Junior standing or approval of instructor.**

Selection, recording, editing, and controlling of sound effects as they are needed in the theatre. A non-technical study of the recording process, along with the operation, care, and maintenance of tape recording equipment.

**EC 206. Socio-Economic Foundations of Contemporary America (3).**

Appraisal and survey of the social and economic developments which lead to and help toward an understanding of present day American society. Economic and social institutional development is studied against the background of the Industrial Revolution.

**EC 340. Personal Finance (3). Pr., junior standing.**

Informative study of plans for managing personal financial problems involving insurance, housing, household budgeting, investments, personal and bank loans, credit and time buying, etc.

**EH 208. Literature of the Western World (3). Pr., EH 108 or EH 253. All quarters.**  
Study of about eight significant literary works of the Western World which provide representative views of man in the Medieval, Renaissance-Reformation, and Eighteenth Century periods.

**EH 301. Creative Writing (3). Fall, Spring.**

Devoted principally to the writing and criticizing of short stories. The student may be permitted to write poetry, drama, or any other form of imaginative literature.

**EH 302. Creative Writing (3). Fall, Spring.**

Continuation of English 301.

**EH 310. Word Study (3). Fall, Spring.**

History of English words and their meanings with the object of improving the student's command of his language and illustrating for him some of the patterns in the development of human thought.

**EH 320. An Introduction to Drama (3). Winter.**

Representative tragedies and comedies of Europe from antiquity to the present. Such figures as Sophocles, Moliere, Shakespeare, and Ibsen will be considered.

**EH 350. Shakespeare's Greatest Plays (3). (Not open to students with credit in EH 451-52.)**

Some of Shakespeare's masterpieces.



- EH 360. Continental Fiction (3). Winter.**  
Representative European short stories and novels.
- EH 365. Southern Literature (3). Spring.**
- EH 381. The Literature of the Age of Reason (3). Fall.**  
Rationalism, its assumptions and its effects, political, social, and scientific as seen in the works of such major eighteenth-century writers as Locke, Johnson, Burke, Voltaire, and Rousseau.
- EH 385. Literature in the Scientific Age (3). Winter.**
- GY 301. Geo-Political Basis of World Powers (3). Pr., junior standing.**  
Deals with the interaction between the natural-physical environment and the international activities of world powers. Emphasis is placed upon the changing geographic and economic patterns in world affairs.
- GY 303. Geography of the Soviet Union (3). Pr., junior standing.**  
Physical and human geography of the U.S.S.R. and its role in international affairs.
- HE 302. Table Service (3). Each quarter.**  
The accessories used for table service in their relation to each other and to the complete service of meals. Principles of flower arrangement are studied and forms of the different food services in the home.
- HE 304. Home and Family Life (3). Lec. 3. Each quarter.**  
The relationship of family members, economic and social problems at all age levels, and development tasks of individuals.
- HE 306. Personal Appearance and Social Interaction (3). All quarters.**  
Good grooming, its contributing factors and their influence on social and business relations.
- HE 345. Creative Crafts (1-2-3). Lab. 9.**  
Design and execution of creative crafts; viz., metal work, ceramics, weaving, fabric decoration.
- HE 353. Community and Family Health (3). Lec. 2, Lab. 2.**  
Health problems related to the community and family including a survey of available health facilities with field trips.
- HE 355. Consumer Textiles (3). Fall, Winter, Spring.**  
Textile fabrics, finishes and trade practice with special emphasis on consumer problems.
- HE 372. Nutrition and Health (3).**  
Study and application of the fundamentals of human nutrition. Food requirements of different age levels and selection of food at different cost levels are considered. Open to all students except Nutrition or Nursing Science majors.
- HF 225. Flower Arranging (3). Lec. 2, Lab. 2. Fall.**  
Principles and practices of flower arranging in the home.
- HY 204. History of the Modern World (3). (Credit in HY 208, 312, and 313 excludes credit for this course.)**  
Survey of the major periods of modern history and the factors contributing to the Modern World Civilization. (Primarily for students in Engineering curricula.)
- HY 314. United States Colonial History (3). Pr., junior standing.**  
Survey of the political, economic, and social history of the colonies from their founding through the American Revolution.
- HY 315. International Organization (3). Pr., junior standing.**  
Traces the evolution of international organization from the beginning through the United Nations.
- HY 322. The United States in World Affairs (3). Pr., junior standing.**  
Brief survey of the influence which the United States has exerted in international affairs.
- HY 371. History of the West (3). Pr., junior standing.**  
Brief history of the development of the West and of its influence on American History.
- MS Advanced Military Science (3). Lec. 4, Drill 2.**  
For students selected.
- MU 371. Introduction to Music (3). (May not be taken for credit by music majors or minors.)**  
Introductory course in the understanding of music including an explanation of basic terms, notations, rhythms, tonal systems, vocal and piano score reading.
- MU 372. Music in the Western Civilization (3). (May not be taken for credit by music majors or minors.)**  
Music as related to the philosophical, economic, and social growth of our culture from the Roman Empire to the 20th Century.

- MU 373. Appreciation of Music (3).** (May not be taken for credit by music majors or minors.)  
Outstanding composers and compositions. No previous music training required. An orientation in the art of listening.
- MU 374. Masterpieces of Music (3).** (May not be taken for credit by music majors or minors.)  
Representative musical works of each great period of musical history. No previous music training required.
- MU 375. History of Jazz (3).** (May not be taken for credit by music majors or minors.)  
The origin, development, and styles of jazz music; people important in the development of American jazz music.
- MU 376. Music for Ballet and Theatre (3).** (May not be taken for credit by music majors or minors.)  
Outstanding musical scores in the field of ballet and the theatre with special emphasis on the modern American musical theatre.
- MU 377. Music Arranging (3).** By permission.  
Project course in arranging various combinations from quartet to symphonic band, and arranging for solo and choral groups.
- NS Advanced Naval Science (3). Lec. 4, Drill 2.**  
For students selected.
- PA 301. Introduction to Philosophy (3).**  
Introductory survey of the great philosophical problems underlying western civilization.
- PA 302. Introduction to Ethics (3).**  
Introduction to the general principles of morality as applied to human conduct.
- PA 308. Introduction to Logic (3).** (Not open to students with credit in PA 307.)  
Principles of logical thinking with emphasis upon functional application of these principles.
- PA 310. Eastern Religious Thought (3).**  
Readings from primary and secondary sources related to Hinduism, Jainism, Buddhism, Taoism, Confucianism, Shintoism, and Sikhism.
- PA 315. Western Religious Thought (3).**  
Readings from primary and secondary sources related to Ancient Egyptian, Mesopotamian, and Greek religions, Judaism, Zoroastrianism, Christianity, and Islam.
- PG 311. The Behavior of Man (3).** (Not available to students with credit in PG 211. May be used as a prerequisite for PG 325, PG 330, PG 345.)  
Humanistic aspects of general psychology emphasizing theory and principles of the science of the behavior of man. Includes topics such as: individual differences, motivation, world of form and space, personality in a social environment, and the assessment of man.
- PS 217. Astronomy (3).**  
Descriptive astronomy, accompanied by occasional observations of the heavenly bodies with a three-inch refracting telescope.
- PT 310. Public Health (3). Pr., junior standing.**  
Non-technical survey of the common communicable diseases including the causative agent, mode of transmission and symptoms. Hygienic, sanitation, and immunization control measures are discussed along with the roles of Federal and State health agencies. (Not open to students in pharmacy.)
- RE 301. Religion and Modern Thought (3).**  
The relation between the philosophical foundations of Christianity and modern thought in other fields.
- RE 305. Comparative Religions (3).**  
Principal religions of the world, including readings in the history and literature of the peoples whose religions are discussed.
- RE 306. Studies in the Gospels (3).**  
Characteristics of the Gospels and the harmony among them.
- RE 307. History of the Christian Church (3).**  
History of the Christian Church from the close of the New Testament period to the present time with chief emphasis upon the development in Western Europe and in the United States.
- RE 308. The Epistles of Paul (3).**  
Epistles of Paul in the New Testament; their dates, backgrounds, and arguments; the major emphasis of Paul's thought; particular studies of portions of Thessalonians, I Corinthians, and Romans to demonstrate typical Pauline themes.

**RE 309. The Prophets of Israel (3).**

History of the Hebrew religion as the background of Christianity. Selected figures of the Old Testament are studied, each seen in his own day seeking to interpret his times in the light of the eternal messages he was called to deliver.

**SA 113. Personal Typewriting (3). Lab. 6. (Not open to those with credit in SA 111 or those who have had one high school unit in typing.)**

Introductory course designed for students who wish to learn typewriting for personal use. Emphasis on touch control of keyboard, centering, appropriate styles for letters, and the preparation of reports. More time spent on the application of fundamentals than on speed.

**SP 253. Group Leadership (3).**

Nature and functions of group leadership; the role of democratic leadership in organizing and conducting a group meeting to reach the aims of that group. Students gain leadership experience in class activities designed to help them learn and perfect democratic leadership techniques.

**SP 305. Public Speaking (3). (Credit in this course excludes credit for SP 231.)**

Designed to aid the student in preparing and delivering effective public speeches extemporaneously. Emphasis is on narrative, expository, argumentative, and motivational speeches.

**SP 316. Parliamentary Procedure (3).**

Designed to aid the individual who may lead or participate in discussions or organizations where orderly procedure is needed. Theory and practice both employed.

**SP 334. Great American Speeches (3). All quarters.**

Critical study and comparison of representative outstanding American speeches; the issues with which they were identified; their relation to the social scene.

**SY 205. Preparation for Marriage (3).**

Basic factors in dating, courtship, mating selection, and engagement in preparation for marriage and family living.

**SY 307. The Court and Penal Administration (3).**

An analysis of the experience of the lawbreaker from arrest through the court and prison to the eventual return to society. Particular attention is paid to correction. (To be offered in alternate years.)

**SY 311. Technology and Social Change (3). Pr., junior standing.**

Relationship between technological development and changes in modern society. Special emphasis is placed upon the human relations aspects of modern science. Designed primarily to meet social science needs of students in the fields of engineering, agriculture, education, and the physical sciences.

**SY 312. Marriage Adjustments (3). Pr., junior standing.**

Survey of emotional, social and biological factors in the family setting with emphasis upon adjustments of marriage and parenthood.

**ZY 204. Insects (3).**

Introduction to the study of life processes, occurrence, and importance of insects. (Credit not allowed to students who have credit in a more advanced course in entomology.)

**ZY 205. Wildlife Conservation (3). Fall.**

Conservation and natural history of important wildlife animals, especially Alabama fish, amphibians, reptiles, birds, and mammals. Some field trips will be required as substitute for part of the scheduled lectures.

**ZY 206. Conservation in the United States (3). Winter, Spring, Summer.**

Basic facts essential to an understanding of current problems pertaining to the conservation of our rapidly depleting natural resources such as soil, water, minerals, forest, and wildlife. Especially planned for elementary and high school teachers.

**ZY 207. Birds (3). Fall, Summer.**

Birds in relation to agriculture and game management, recognition of various species as to flight, color markings, songs, and feeding habits.

**ZY 210. Fish Culture (3). Winter.**

Introduction to the construction and management of ponds, and the principles underlying fish production; also fishing methods, bait production, and the identification of the more common sport fish.

**Aeronautical Administration (AA)**

*Head Professor Pitts*

*Assistant Professors Robinson and Williams*

*Instructor Wiseman*

**201. Elementary Aeronautics (5).**

Introduction to aviation and the basic principles of flight. This course is open to students in all divisions of the University who desire a general and practical knowledge of aviation.

303. **Air Navigation I (5).** Lec. 4, Lab. 3. Pr., MH 112.  
Construction of maps and charts; dead reckoning and pilotage; solution, application and practice of navigation problems.
304. **Meteorology (5).** Lec. 4, Lab. 3. Pr., sophomore standing.  
An introductory course in Meteorology including a basic understanding of the atmosphere, measurement of meteorological elements and effect of these on the lower atmosphere. Credit may not be earned in both AA 304 and AA 305.
305. **Aviation Meteorology (5).** Lec. 4, Lab. 3. Pr., MH 112 and PS 204.  
A basic study of meteorology and its application to aviation to include computation of data and preparation of weather maps. Weather elements as related to operation of aircraft, computation of data; preparation of weather maps.
306. **Private Pilot Training—Flight (3).** Lec. 1, Lab. 6.  
Dual and solo flight instruction as required for the FAA Private Pilot Certificate. Previous flight experience may be substituted for a part of the above. See page 84 for fees.
307. **Air Navigation II (5).** Lec. 4, Lab. 3. Pr., AA 303.  
Use of navigation instruments and radio aids; celestial navigation; planning of long range flights; practice of problems.
308. **Federal Aviation Regulations (3).** Pr., sophomore standing.  
A study of all regulations concerning airmen, aircraft, air agencies, operation and traffic rules.
401. **Aeronautical Seminar I (1).** Pr., junior standing. Fall.  
Special problems and current status of the aircraft and related industries.
402. **Aeronautical Seminar II (1).** Pr., junior standing. Winter.  
Special problems and current status of the missile and space industries.
403. **Aeronautical Seminar III (1).** Pr., junior standing. Spring.  
Current economic aspects of the aerospace industries.
406. **Commercial Pilot Training—Flight (3).** Lab. 9.  
Dual and solo flight instruction as required for the FAA Commercial Pilot Certificate. Previous flight experience may be substituted for a part of the above. See page 84 for fees.
407. **Aircraft Powerplants (5).** Pr., junior standing.  
Engine nomenclature and types, cycles of operation, lubrication, fuels, carburetion, ignition and starting systems, engine-propeller performance, introduction to jet propulsion.
416. **Airport Management (5).** Pr., junior standing.  
Principles of management; financing the airport; sources of income; establishment of rates for services rendered; problems of equipment and airport maintenance; accounting procedures; legal responsibilities; merchandizing.
417. **Airline Operation (5).** Pr., junior standing.  
History of airlines; financial structure and sources of capital of airlines; sales, reservations and space control; dispatching and passenger care; determination of tariffs; personnel relations; research; public relations.
418. **Air Transportation (5).** Pr., junior standing.  
Historical development and present status of air transportation facilities; regulation, state and federal; legal characteristics of air transportation industry; problems and services of commercial air transportation.
419. **Air Traffic Control (5).** Lec. 4, Lab. 3. Pr., junior standing and AA 307.  
A study of all facilities used in controlling air traffic with special emphasis on control center and control tower operation.
423. **Flight Instructor Training (3).** Lec. 1, Lab. 6. Pr., a valid Commercial Pilot Certificate.  
Instruction in the theory, methods and technique of flight training. Sufficient ground and flight instruction is given to qualify for the FAA Flight Instructor Rating. See page 84 for fees.
424. **Instrument Flying (3).** Lab. 9. Pr., a valid Private or Commercial Pilot Certificate.  
Ground and flight instruction in the theory and practice of instrument flying. See page 84 for fees.
425. **Aircraft Components (5).** Pr., junior standing.  
Design, installation, use, and function of hydraulic, mechanical, and electrical systems and equipment of aircraft.
427. **Multi-Engine Training (3).** Lab. 9. Pr., a valid Private or Commercial Pilot Certificate.  
Instruction in the methods and techniques of multi-engine aircraft pilotage. Sufficient ground and flight instruction is given to qualify for the FAA pilot rating of Multi-Engine—Land. See page 84 for fees.

**Aerospace Engineering (AE)***Head Professor Pitts**Professors Djordjevic, Hu, and Martin**Associate Professors Barna, Harwell, and Sherling**Assistant Professor Nichols\***Instructor Stone*

205. **Aerospace Fundamentals (3).**  
Introduction to aerospace concepts and terminology. Consideration is given to the schemes and designs of aerospace systems.
206. **Elementary Astronautics (3).** Pr., AE 205. Corequisite, MH 361.  
Fundamental study of the atmosphere and development of the standard atmosphere. Introduction to planetary motion with emphasis on mechanics of the solar system. Designed to acquaint the student with the overall environment and technology of space travel.
300. **Aerospace Analysis (5).** Pr., MH 361.  
Introduction and application of special notations and methods used in aerospace engineering.
301. **Basic Aerodynamics (5).** Pr., AE 205, ME 321, ME 301, or ME 310 and MH 361.  
The basic equations of fluid dynamics with application to the prediction of pressure distributions, velocity measuring techniques, and aerodynamic testings facilities. Basic airfoil and wing theory with application extended to propellers, elementary boundary layer theory, and fundamentals of dimensional analysis. Also includes basic performance characteristics.
308. **Aircraft Structures I (5).** Pr., AE 205 and ME 306.  
Load analysis of aerospace structures involving load factors, space frames, beams and redundant frames.
309. **Aerodynamics Laboratory I (1).** Lab. (3). Corequisite, AE 301.  
Basic aerodynamic investigations and written reports, wind tunnel calibration, basic wind tunnel tests and interpretation of test results.
401. **Aeronautical Problems I (1).** Lab. 3. Pr., senior standing.  
Investigation of current aeronautical problems; preparation and presentation of technical papers and reports.
402. **Aeronautical Problems II (1).** Lab. 3. Pr., AE 401.  
Continuation of AE 401.
403. **Stability and Control (5).** Pr., AE 404.  
Stability and control of conventional aircraft and advanced types of missiles. Static longitudinal and lateral stability and control criteria and requirements, stick fixed and stick free. Derivation of generalized equations of the dynamics of flight. Longitudinal dynamic stability, numerical analysis and analog computer methods of solution. Control effectiveness and stick forces in standard maneuvers.
404. **High Speed Aerodynamics (5).** Pr., junior standing and AE 413.  
Fundamental principles of compressible flow, including subsonic, transonic, supersonic and hypersonic aerodynamics, high speed wind tunnels and laboratory techniques.
405. **Boundary Layer Theory and Aerodynamic Heating (5).** Pr., junior standing and AE 404.  
Theoretical background essential to a fundamental understanding of laminar and turbulent boundary layers and their relation to skin friction and heat transfer. Basic concepts of the continuum, slip and free-molecule flow regimes and their application to typical aerodynamic heating problems.
408. **Aerodynamics Laboratory II (1).** Lab. 3. Corequisite, AE 403.  
Experimental determination of aircraft stability derivatives, including effect of aircraft configuration changes.
409. **Aircraft Structures II (5).** Pr., AE 308.  
Analysis for deflections, redundancies, structural stability of flat and curved plates; sandwich construction; shell analysis.
411. **Airplane Design (5).** Lec. 3, Lab. 6. Pr., AE 409.  
Aircraft and missile design specifications and their application to typical structural design problems. (Computer applications to structural problems.)
412. **Airplane Structures Laboratory (2).** Lab. 6. Corequisite, AE 409.  
Experimental stress analysis techniques and their application to aerospace structures. Electrical, mechanical and optical strain measurements for static and dynamic loading. Fatigue and elevated temperature effects.
413. **Theoretical Aerodynamics (5).** Pr., AE 300 and AE 301.  
Fundamental practices of aerodynamics, potential flow theory, dynamics of viscous fluids. Correlation of potential flows theory with experimental results.

\* On leave.

414. **Gasdynamics (5).** Pr., permission of instructor and junior standing.  
Fundamentals of the kinetic theory of gases. Molecular transport of mass, momentum and energy. Momentum and heat diffusion basic equations for isentropic flow. Nonisentropic flow, boundary layer and shock wave phenomena. Mechanics of rarefied gases. Aero-thermodynamic aspects of hypersonic flow.
415. **Rocket and Jet Propulsion (5).** Pr., junior standing and ME 301 or ME 310, and AE 301 or ME 325.  
Thermodynamic cycle of rocket and jet engines, air compressors, and gas turbines. Flow of gasses through ducts and nozzles.
428. **Space Propulsion Systems (5).** Pr., junior standing and AE 415.  
Introduction to reaction engines for use in outer space vehicles. Environment of outer space, power requirements for space missions, introduction to relativistic mechanics, nuclear power systems, particle generators, magnetohydrodynamics, plasma accelerators and photonic engines.
429. **Aircraft Vibration and Flutter (5).** Pr., AE 301 and ME 322.  
Lagrangian equation of motion, linear and multiple degree-of-freedom systems, coupled and un-coupled beam vibration, flutter theory.
430. **Rotary Wing Aircraft (5).** Pr., AE 301.  
Rotary wing flight characteristics and basic aerodynamics including stability, control vibration and performance.
431. **Astronautics (5).** Pr., AE 206, AE 300 and AE 301.  
Trajectory analysis, including application of digital and analog computers, ballistic missile range parameters and deviation coefficients; satellite orbits and rocket interplanetary trajectories.

#### GRADUATE COURSES

601. **Advanced Supersonic Aerodynamics (5).** Pr., AE 404.  
A continuation of AE 404, High Speed Aerodynamics. Consists of a rigorous development of linearized and nonlinearized compressible fluid flow and application. Lifting surfaces, lifting bodies, duct flow and boundary layer effects.
602. **Advanced Elements of High Speed Aerodynamics (5).** Pr., AE 601 or equivalent.  
A continuation of AE 601 to include three-dimensional wing theory; slender body theory and similarity laws for subsonic, supersonic and hypersonic flow conditions.
603. **High-Speed Viscous Aerodynamics (5).** Pr., AE 602 or equivalent.  
A continuation of AE 602 to include effects of conductivity and viscosity on aerodynamic properties.
605. **Aeroelasticity (5).** Pr., AE 429.  
General formulation of aerolastic problems, buffeting, flutter and loss of control, dynamic stresses.
611. **Thrust Generation (5).** Pr., AE 301 or equivalent.  
Aerothermodynamics of compressible flow, chemical propellant characteristics, heat transfer in fluid flow, nuclear propulsion.
615. **Hypersonic Flow Theory (5).** Pr., AE 404, Corequisite, MH 461.  
Hypersonic continuum theory, governing equations of motion for two and three dimensional flows, hypersonic small disturbance theory, viscous effects. Real gas effects in gasdynamics and rarefied gas flows, basic heat transfer concepts.
619. **Dynamics of Flight (5).** Pr., AE 403, Corequisite, MH 661.  
Small-disturbance theory and the linearized solutions of the general equations of unsteady motions, aerodynamic derivatives analysis, aerodynamic transfer functions, dynamic stability of uncontrolled longitudinal and lateral motions, solutions of the dynamic stability problems by electronic computing devices, inverse problem, automatic stability and control.
631. **Advanced Astronautics (5).** Pr., AE 431 or permission of instructor.  
Advanced astrodynamics and trajectory theory; n-body problems; perturbation forces and effects; orbital transfer and trajectory optimization; theory of space guidance. A continuation of AE 431 at the graduate level.
690. **Seminar.** Credit to be arranged. May be taken more than one quarter.  
Provides weekly lectures on current developments in aerospace sciences by staff members, graduate students, and visiting scientists and engineers.
699. **Research and Thesis.** Credit to be arranged.

#### Agricultural Economics (AS)

*Professors Lanham, Blackstone, Danner, White, and Yeager*  
*Associate Professors Kern, Morrill, Partenheimer, and Wilson*  
*Assistant Professors Dunkelberger and Miller*

101. **Agricultural Orientation (0).** Lec. 1. All quarters. (Required of all students in School of Agriculture.)



- 102. Agricultural Economics Orientation (0).** Lec. 1. (Required of all students in Agricultural Administration.)
- 202. Agricultural Economics (5).** All quarters. Pr., sophomore standing.  
Principles of economics as applied to agriculture. Agriculture in the national and state economy. An orientation in agricultural economics dealing especially with economic principles involved in changes and trends in farm-related production, marketing, prices, consumption, taxation, credit, finance, public policies, tenure, etc., and with utilization of land, labor, and capital.
- 301. Agricultural Marketing (5).** Pr., AS 202 or EC 201.  
Principles and problems involved in marketing farm products. Analysis of marketing functions, services, and costs; reducing costs and improving marketing efficiency. Marketing methods and distribution channels of major farm commodities. Market institutions and operation.
- 302. Farm Records (3).** Pr., AS 202 or EC 201.  
Farm records and accounts and their uses. Kinds and systems of records and accounts adapted to use on Alabama farms. Using farm records to aid in the successful and profitable operation of farm businesses; in the integration of farm and home development; to complement necessary records for income and Social Security tax purposes; and as a basis for analyzing and planning farm businesses.
- 303. Agricultural Cooperatives (3).** Pr., AS 202.  
Principles and problems of organizing and operating farmers' cooperative buying and selling associations. History, importance, and types of cooperative, non-profit, and mutual associations. Development of cooperative action, collective bargaining, and cooperative organization. Analysis of cooperatives in the economy and comparisons with other forms of business organization.
- 304. Agricultural Finance (3).** Pr., AS 202.  
Economic problems and policies in financing agriculture. Capital requirements and credit needs; sources, availability, and costs of capital and credit; principles of lending, borrowing, and investment; voluntary and involuntary capital rationing; institutional developments for improving allocation of capital and credit. Emphasis is placed on both public and private credit institutions and on financing problems and policies in Alabama agriculture.
- 305. Farm Appraisal (3).** Pr., AS 202.  
The theory of land values; techniques on farm land and building appraisals for different purposes; relationships of land use, soils, crops, forestry management, buildings, land titles, farm prices, taxes, and interest rates to land values; actual appraisals of selected farms; evaluation of appraisal methods and forms currently in use.
- 361. Rural Sociology (5).** Pr., sophomore standing.  
An introduction to rural sociology emphasizing the basic concepts and principles as applied to life in the rural community. Special attention given to the culture, social organization, and social problems of rural people in the United States, and in the South in particular.
- 401. Farm Management (5).** Pr., AS 202 or EC 201 and junior standing.  
Principles and problems involved in acquiring, organizing, and operating a successful farm business. Formation and integration of family and farm business goals. Development of managerial skill for farming, farm and home development work, and professional farm management work.
- 403. Agricultural Prices (3).** Pr., AS 202 or EC 201 and junior standing.  
Principles and factors involved in the pricing process with special reference to agricultural products and markets. Functions of prices and principles of supply and demand in price determination. Sources of farm price data and methods of price analysis. Policy implications of economic principles as applied to farm price policy programs.
- 405. Agricultural Policy (3).** Pr., AS 202 or EC 201 and junior standing.  
Concepts, objectives and operation of public policies affecting agriculture. Development of agricultural policies in the United States. Alternative methods of dealing with farm problems at national, state, and local levels, and analyses of interrelationships with other public policy programs. Evaluation of consequences for farmers, consumers, and taxpayers. Emphasis is on current agricultural policies and proposals.
- 410. Agricultural Business Management (3).** Pr., AS 202 or EC 201 and junior standing.  
Principles and problems involved in acquiring, organizing and operating successful agricultural businesses; capital requirements for selected agricultural businesses, factors affecting location and growth, and measures of technical and economic efficiency in organization and operation; practices involved in buying, pricing, and merchandising; management problems and policies in financing, personnel, and public relations.
- 411. Economic Development of Rural Resources (3).** Pr., AS 202 and junior standing.  
Theoretical and empirical study of the processes of economic growth and development; the problems of undeveloped and underdeveloped areas; the role of agriculture in a developing economy; an examination of the policies and programs needed for effective economic growth and development.

- 412. Economic Aspects of Water Resources Management (5).** Pr., junior standing.  
Theoretical and empirical study of the supply, demand, and use of water resources including its economic, legal, and political dimensions. Particular emphasis on the economics of management of water resource use and conservation in terms of present and future supplies and needs. Both public and private water resources will be considered.
- 441. History and Philosophy of Extension (3).** Lec. 4. Pr., junior standing.  
Provides a background, understanding, and appreciation of the Cooperative Extension Service, as an educational institution. This course can meet the needs of students preparing for work in Agricultural and Home Economics Extension as well as those currently so engaged. (Credit in HE 401 excludes credit in this course.)
- 461. Sociology of Rural Life (3).** Lec. 4. Pr., graduate standing.  
Rural sociology with consideration of the social structures and social processes of rural social systems. Credit for AS 361 precludes credit for this course. (This course is designed primarily for credit at off-campus centers.)
- 462. Rural Communities Around the World (3).** Pr., SY 201 or AS 361, and junior standing.  
Comparative study of the structure and function of rural communities throughout the world with emphasis on their limitations and potentials for social changes and adjustments. Rural life in the United States will be used as the primary basis for comparison.
- 490. Senior Seminar (1).** Lec. 1. Pr., senior standing.  
Current developments in Agricultural Economics; the role of Agricultural Economics in the general economy.

## GRADUATE COURSES

- 601. Advanced Farm Management (5).** Pr., graduate standing or consent of instructor.  
Advanced theory and application of farm management principles and other economic concepts in agriculture. Emphasis is on successful and profitable organization, operation, and management of various types of farms. Optimum utilization of available resources on individual farms.
- 602. Advanced Agricultural Prices (5).** Pr., EC 345 and graduate standing or consent of instructor.  
Methods of price analysis, separation of fluctuations from price trends, measurement of changes in supply and demand of farm products. Factors affecting prices, price trends, price cycles, and other price structures. Interrelated demands, elasticity concepts, appraisal of recent supply and demand studies. Emphasis is on agricultural products.
- 603. Land Economics (5).** Pr., graduate standing or consent of instructor.  
Principal economic and institutional factors affecting man in his use of land. Supply, demand, and future requirements for land. Property rights, land planning, zoning, and other social controls affecting land utilization. Land appraisal and valuation. Successful enterprise location. Rural and urban development, use, and conservation of land resources.
- 604. Advanced Cooperative Marketing (5).** Pr., graduate standing or consent of instructor.  
Cooperative theory and practices. Detailed study of history and development of cooperative movement in the United States and selected foreign countries. Special emphasis on current cooperative marketing status with respect to organization, legal status, and current operating policies and methods used by selected farmers' cooperatives.
- 605. Advanced Agricultural Marketing (5).** Pr., graduate standing or consent of instructor.  
Theory of marketing with emphasis on its application to methods used and problems faced in marketing Alabama-produced farm products. Objectives in agricultural marketing. Marketing orders and agreements, marketing quotas, and other policy programs affecting marketing. Margins, futures, prices, grades, transportation, storage, advertising, promotion, etc., as they affect farmers' marketing. Marketing survey methods.
- 608. Economics of Agricultural Production (5).** Pr., EC 451 and graduate standing or consent of instructor.  
Resource allocation and efficiency of production. Production and efficiency in the firm, between firms, and between agriculture and other industries. Influences on agricultural resource allocation and efficiency of risk and uncertainty including price instability, institutional changes, technological advances, imperfect knowledge of production methods, and variations in the human element with emphasis on the role of management.
- 641. Extension Methods (3).** Lec. 4. Pr., AS 441 or the equivalent.  
Various methods that may be used in projecting Extension programs are reviewed and related to effective program accomplishment for particular objectives and under different conditions that might prevail.

642. **Extension Programs (3). Lec. 4. Pr., AS 441 or the equivalent.**  
The over-all Extension organization and its relation to the steps and procedures of program development and evaluation. Designed particularly to meet the needs of persons responsible for Extension program development and evaluation at the county level.
651. **Farm Organization and Management (3). Lec. 4. Pr., graduate standing.**  
Formation and integration of family and farm business goals; acquisition, organization, operation and management of successful farm businesses; organization and management of efficient farm units; development of managerial skill for farming, farm and home development work, and other farm management work; field study of organization, operation, and management of selected farms. (Credit for both AS 651 and AS 601 may not be used to meet requirements for the Master's degree.)
652. **Agricultural Prices and Marketing (3). Lec. 4. Pr., graduate standing.**  
Principles and problems in marketing agricultural products. Objectives in agricultural marketing. Factors involved in the pricing process of agricultural products and markets. Function of prices and principles of supply and demand in price determination. Sources of farm price and market data, and methods of price and market analysis: Implications of current farm price policy and marketing programs. (Credit for both AS 652 and AS 602 may not be used to meet requirements for the Master's degree.)
653. **Public Policy in Agriculture (3). Lec. 4. Pr., graduate standing.**  
Concepts, objectives, and operation of public policies affecting agriculture; development of agricultural policies in the United States; alternative methods of dealing with farm problems and opportunities at national, state, and local levels, and analysis of interrelationships with other public policy programs; evaluation of consequences for farmers, consumers, and taxpayers; emphasis on current agricultural policies and programs, and on current public policy.
661. **Regionalism and Rural Life (3). Lec. 4. Pr., graduate standing.**  
The regionalist orientation and its application to rural living with specific attention to the Southern Regions of the United States. Topics covered will include inter-regional influences, subcultural variations, ecological patterns, topographical features, and temporal consideration.
662. **Social Organization and Community Living in Rural Areas (3). Lec. 4. Pr., graduate standing.**  
The organization of rural society and an application of the group dynamics perspective to rural community life, problems in rural living, and proposals for facilitating action programs in rural areas such as leadership development, group analysis and participation, and effective community organization.
670. **Research Methodology in Agricultural Economics (3). Pr., graduate standing and consent of instructor.**  
Introduction to scientific method and its application in planning and conducting research in agricultural economics; nature and limitations of economic analysis; problem selection, project planning, analytical framework, development and use of questionnaires, sampling procedures, control groups, obtaining and analyzing data, and interpreting and presenting results; evaluation of current research procedures in agricultural economics and related areas.
680. **Advanced Agricultural Economics Problems.** Credit to be arranged.
690. **Seminar (1-1-1). Fall, Winter, Spring.**
699. **Research and Thesis.** Credit to be arranged.

### **Administration, Supervision, and Guidance (AED)**

*Head Professor Abbott  
Professors Pierce and White  
Associate Professors Grant, Saunders, and Tincher  
Assistant Professor Teague  
Visiting Professor Francis*

Prerequisites and corequisites in the Department of Administration, Supervision, and Guidance are: experience in teaching; employment or definite professional objectives leading to employment in administration, supervision, or guidance; AED 681, 670, or 621, or equivalent, as prerequisite or corequisite to advanced study in any of the specialized areas; and FED 601, PG 617, FED 645, and FED 661, or equivalent, as prerequisite or corequisite to specialized study in administration, supervision, or guidance.

#### **GRADUATE COURSES**

621. **Guidance in the Public Schools (5).**  
Basic guidance for superintendents, principals, teachers, and other guidance personnel. Among topics covered are: philosophy and principles of guidance, function and services, organization procedures, administration and evaluation; the role of teachers, administrators and guidance staff.

- 627. Problems in Guidance (5).**  
Designed to provide opportunity for guidance personnel to apply the scientific methods to the solution of problems arising from their experiences in public schools.
- 628. Counseling in the Public Schools (5).**  
Designed to assist teachers and other guidance personnel in acquiring knowledge, understanding and skill regarding counseling as a helping relationship. Emphasis is given to counseling in the classroom and the information and skills appropriate to counseling.
- 632. Organization and Administration of Guidance Programs (5).**  
Designed for administrative and guidance personnel. Its primary purpose is to identify the major functions of education, perceive guidance in this perspective and then to study the organization, administration, and evaluation of guidance programs in their educational setting. Topics discussed include principles of administrative practice, role of staff in regard to the guidance program, organizational patterns for guidance programs, possible ways of initiating a guidance program, and means of evaluation.
- 633. Analysis of the Individual (5).**  
To assist teachers and other guidance personnel in acquiring knowledge, understanding and skill necessary to obtain records and appraise information about the pupil as an individual and as a member of a group. Attention is given to the use of standardized test data; however, primary emphasis is placed on other tools and techniques for securing and analyzing information about pupils and their use in counseling.
- 638. Information Services in the Guidance Program (5).**  
To assist guidance personnel in acquiring knowledge, understanding and skill relative to collecting, evaluating and interpreting occupational, educational, and related information for guidance purposes. Emphasis is placed on the value and necessity of work, educational and occupational opportunities, results of recent educational and occupational research, methods of studying occupations, community occupational and educational surveys.
- 646. Studies in Education (1-3). Pr., one quarter of graduate study.**  
A problem using research techniques, to be selected in consultation with the supervising professor. The problem selected should contribute to the program of the student. (Credit in ED 651 prior to 1960 excludes credit in this course.)
- 659-660. Practicum in Area of Specialization (5-5). Pr., master's degree or equivalent in Education and permission of major professor.**  
Provides advanced graduate students with supervised experiences with emphasis on application of concepts, principles, and skills acquired in previous course work.
- 670. Supervision of the Instructional Program (5).**  
Designed to assist superintendents, supervisors, principals, teachers, and other educational leaders in understanding the meaning, purpose and function of supervision, and in understanding the basic factors involved in the improvement of teaching and in understanding and evaluating the various concepts of educational leadership as they apply to the improvement of teaching effectiveness.
- 681. Organization and Administration of Public Education (5).**  
Designed for superintendents, principals, teachers, and other educational leaders. Topics covered include: purposes of organization and administration; organization and administration on federal, state, and local levels; financial support and accounting; operation of plant; school-community interaction, and personnel administration.
- 683. The Leadership Role in Educational Administration (5).**  
A study of current theories, concepts and principles of leadership and their application to education. Further emphasis is placed on the responsibility of the educational administrator for leadership in the school and community, and in the continuous improvement of staff competence.
- 685. Administrative Organization and Behavior (5).**  
Current theories and concepts of formal organization and of collective behavior; a social-psychological approach to organizations, and current trends in organizing for instruction.
- 686. Administration and Policy Formation (5).**  
Analysis of basic social forces, antecedent movements, and political action leading to formal enactment of educational policy at national, state, and local levels; consideration given to the roles and functions of governing and regulating boards and agencies.
- 688. School Finance and Business Administration (5).**  
A study of the relationships of finance and business management to the quality of education with emphasis placed on theories and principles of school support including responsibility of federal, state and local agencies; state foundation programs, preparation, and administration of salary schedules, budgeting and business administration including purchasing and accounting insurance and bonding.
- 689. Planning and Maintenance of School Buildings (5).**  
A study of the relationships of plant and plant maintenance to the quality of education; an analysis of population growth and distribution as related to building needs, selection of sites, finance programs, problems of building utilization, evaluation, equipment, maintenance and custodial services.

690. **Administering Auxiliary Services in the Public Schools (5).**  
A study of the purposes and role of auxiliary school services. Special attention is given to the administration of transportation, school lunch, safety, health and medical problems.
692. **Constitutional, Statutory and Judicial Foundations of Education (5).**  
A study of the constitutional and statutory provisions for education and an analysis of judicial decisions affecting education. Among topics included are: authority and responsibility of the teacher; rights, privileges and responsibilities of students; use of school property, taxation; curriculum, contracts and retirement provisions; contractual capacity and liability, and transportation.
693. **Personnel Administration (5).**  
Designed to assist superintendents, supervisors, principals, and other educational leaders in acquiring knowledge and developing understandings with respect to the relationships between effective personnel administration and the quality of education. Emphasis is placed on results of recent research and experimentation in areas such as morale, welfare, work loads, pupil accounting, and bases for salary determination.
694. **Case Studies in Counseling (5). Pr., permission of the instructor.**  
Designed to develop competency in the application of counseling theory and associated techniques, with special emphasis on school problems, investigations and applications made through the use of case studies.
699. **Thesis Research. Credit to be arranged. May be taken more than one quarter.**
798. **Research and Thesis (5).**
799. **Doctoral Research and Dissertation. Credit to be arranged.**

### **Agricultural Engineering (AN)**

*Professors Kummer and Neal*  
*Research Lecturers Cooper, Gill, Nichols, and Reed*  
*Associate Professors Renoll and Dumas*  
*Assistant Professor J. G. Hendrick, III*

- 101-2. **Introduction to Agricultural Engineering (0). Lec. 1. Winter, Spring.**  
Orientation and consultation for all freshmen and new students.
201. **Soil and Implement Mechanics (5). Lec. 3, Lab. 6. Fall. Pr., EG 105.**  
Soil and implement relationships of common tillage tools. Machinery economics with respect to size and capacity of machines. Implement design as related to tillage.
301. **Drainage and Terracing (5). Lec. 3, Lab. 6. Fall, Spring, Summer.**  
Practical applications of drainage and terracing.
302. **Farm Structures (5). Lec. 3, Lab. 4. Fall.**  
Analysis and design of functional structures for use on the farm, physical and structural properties of natural and synthetic construction materials and methods of construction.
303. **Farm Machinery and Equipment (5). Lec. 3, Lab. 6. Spring, Fall, Summer.**  
Selection, operation, and servicing of mechanical farm equipment used in seedbed preparation, planting, cultivating, and harvesting.
304. **Farm Electrical Design (5). Lec. 3, Lab. 4. Spring. Pr., EE 202.**  
Farm wiring system design, characteristics and application of electrical equipment and control circuits for use on the farm. Safety precautions.
305. **Farm Tractors and Engines (5). Lec. 3, Lab. 4. Winter.**  
Selection, operation, and servicing of tractors and engines employing different principles of operation and fuels.
306. **Farm Building Construction (3). Lec. 2, Lab. 3. Winter.**  
Materials and methods of farm buildings construction. Selection, repair, and use of farm buildings.
307. **Farm Wiring and Motors (3). Lec. 2, Lab. 3. Spring.**  
Fundamentals of residential and farmstead wiring. Selection, operation, and care of farm motors.
308. **Crop Processing and Materials Handling (3). Lec. 2, Lab. 3. Fall. Pr., sophomore standing.**  
The principles and methods of farm crop processing systems including drying, storing, pelleting, mixing and mechanical handling of farm products.
401. **Mechanics of Tractor Power (5). Lec. 3, Lab. 4. Winter. Pr., ME 310, junior standing.**  
Construction, design, and operating principles of the farm tractor. Mechanics of tractor stability, traction, weight transfer, and safety. Tractor efficiency as influenced by fuel, ignition, temperature, and power transmissions.

403. Soil and Water Engineering (5). Lec. 4, Lab. 3. Fall. Pr., CE 210, ME 434, junior standing.  
A study of the relationship of soils, rainfall, runoff and topography to drainage and terrace systems design.
404. Agricultural Process Engineering (5). Lec. 3, Lab. 4. Spring. Pr., ME 310, junior standing.  
Design, selection and operation of environmental control equipment, processing and materials handling systems for use on the farm.
405. Irrigation Design (5). Spring. Pr., AN 403 and junior standing.  
The design of flood, furrow, and sprinkler irrigation systems, including the development of water supply sources, pumping and power requirements; the determination of irrigation efficiencies and techniques.
406. Dairy Engineering (3). Lec. 2, Lab. 3. Winter.  
Selection, operation, and servicing of steam generating and refrigerating plants, indicating and recording instruments, design and arrangements of dairy buildings.
407. Agricultural Machinery Design Analysis (3). Lec. 2, Lab. 3. Fall, Spring. Pr., AN 201, junior standing.  
Design, construction, and comparative analysis of component parts of farm machines other than tractors. Includes use of dynamometers, electrical resistance strain gages and functional analysis instrumentation.
408. Agricultural Tractor Design Analysis (3). Lec. 2, Lab. 3. Winter, Spring. Pr., AN 401, junior standing.  
Use of electronic analysis instrumentation equipment in the evaluation of tractor design elements and construction principles with respect to thermal and tractive efficiency, vehicle stability, tractor hitches and weight distribution.
409. Irrigation Design Lab. (2). Lab. 5. Spring. Pr., AN 403 and corequisite or prerequisite AN 405.  
Design and calibration of water measuring devices used in irrigation, such as weirs, flumes, orifices and siphons; stream flow measurement; techniques of measuring soil infiltration and water holding capacity. Selection and design of irrigation systems for optimum performance and the application of engineering techniques to land forming.
422. Farm Power and Equipment (5). Summer. Half-quarter course. Pr., AN 303, junior standing. For Vocational Agriculture Teachers.
424. Farm Electrification (5). Summer. Half-quarter course. Pr., junior standing. For Vocational Agriculture Teachers.
426. Farm Irrigation (5). Summer. Half-quarter course. Pr., junior standing. For Vocational Agriculture Teachers.
432. Engineering in Agriculture I—Agricultural Machinery (3). Lec.-Dem. 4. Pr., graduate standing.  
The utilization of modern agricultural machinery on the farm with emphasis on safety, management, costs, economic justification, and principles of operation. (Credit for both AN 432 and AN 422 may not be used to meet requirements for the Master's degree.)
434. Engineering in Agriculture II—Agricultural Power (3). Lec.-Dem. 4. Pr., graduate standing.  
Study of farm tractor and power units used on the farm; includes the basic principles of operation with major interest toward lubrication, costs, operational problems, safety and a comparison of gasoline, Diesel, and LP gas fuels, and units. (Credit for both AN 434 and AN 422 may not be used to meet requirements for the Master's degree.)

## COURSES PRIMARILY FOR GRADUATE STUDENTS

601. Land Conservation and Development (5). Lec. 4, Lab. 3. Pr., AN 403.  
Fundamental problems of hydrology and soil physics applied to the soil erosion process and engineering practices for erosion control. Principles of design for farm drainage and irrigation systems.
602. Advanced Farm Power and Machinery (5). Arrange. Pr., AN 201 and 401.  
Principles of operation and analysis of design of basic machine elements, hydraulic systems and functional requirements of farm power units, agricultural machinery and materials of construction.
603. Theory of Irrigation and Drainage (5). Pr., AN 405, CE 612 and AY 455.  
Analytical, numerical, and analogue solutions of flow of liquids in porous media problems with special application to drainage and irrigation, unsaturated flow, in situ measurement of soil permeability, principles and applications of centrifugal, mixed flow, and propeller pumps.
604. Agricultural Engineering Problems. Credit to be arranged. Pr., AN 404.  
Special advanced engineering and design problems in the application of electricity to farm uses, the design and construction of farm structures and processing equipment, the physical properties of soil in relation to tillage implement design and the application of modern testing and measuring techniques to agricultural engineering research.



**605. Soil Dynamics (5). Pr., AY 455.**

Analysis and measurements of soil reactions, as affected by the physical properties of the soil, when subjected to forces imposed by tillage implements and traction devices. Among the soil physical properties considered are shear, cohesion, adhesion, consolidation, plasticity and abrasion.

**608. Seminar. Credit to be arranged. All quarters.**

Reviews and discussions of research techniques, current scientific literature and recent developments in agricultural engineering research.

**699. Research and Thesis. Credit to be arranged.**

May be taken more than one quarter.

**799. Doctoral Research and Dissertation. Credit to be arranged.****Agronomy and Soils (AY)**

*Professors Rogers, Donnelly, Ensminger, Hood, McCain, Rouse, Scarsbrook, Sturkie and Wear*

*Associate Professors Adams, Dixon, Hiltbold, Hoveland, Johnson, Patterson*  
*Assistant Professor Patrick*

**201. Grain Crops (5). Lec. 4, Lab. 2. All quarters.**

Fundamental factors involved in the economical production of corn, small grains, grain sorghum, peanuts and soybeans.

**304. General Soils (5). Lec. 4, Lab. 2. Fall, Winter, Spring. Pr., CH 105 and 105L.**

A survey course dealing with the formation, classification, composition, properties, management, fertility, and conservation of soils in relation to the growth of plants.

**305. General Soils (5). Lec. 4, Lab. 2. Winter. Pr., CH 103-104.**

A survey course dealing with the formation, classification, composition and properties of soils and their influence on vegetative growth and development on forest lands. Open only to students in Forestry.

**306. Soil Morphology and Survey (3). Lec. 1, Lab. 4. Spring. Pr., AY 304, 305 or 307.**

Specially designed to fit students for employment as soil surveyors in state and federal agencies. To be given only when a sufficient number of students elect it.

**307. General Soils (5). Lec. 4, Lab. 2. Fall, Spring. Pr., CH 103-104.**

Survey of the general field of soils including genesis, classification and fertility. Open only to students in Vocational Agriculture.

**401. Forage Crops (5). Lec. 4, Lab. 2. Fall, Winter, Spring, Summer. Pr., junior standing.**

Deals with both grass and legume forage crops. The crops are considered from the standpoint of (a) pasture crops, (b) hay and silage crops, (c) soil improving crops.

**402. Soil Fertility (5). Lec. 5. Spring. Pr., AY 304, 305 or 307, and junior standing.**

Lectures, demonstrations and problems designed to illustrate principles of soil fertility as related to fertilizer practices and crop production. An advanced course required of all students majoring in Agronomy and Soils. Either AY 402 or AY 407, but not both, may be used to satisfy the minimum requirement for the Master's degree.

**403. Grazing Systems in Alabama (5). Lec. 3, Lab. 4. Spring. Pr., AY 401, and junior standing.**

Establishment, maintenance, and management of crops used in grazing systems in the various soil and geographic areas of Alabama.

**404. Cotton Production (5). Lec. 5. Fall, Winter. Pr., junior standing.**

Most of the time will be devoted to cotton with a limited amount of time devoted to other fiber crops.

**405. Turf and Its Management (3). Lec. 2, Lab. 2. Fall, odd years. Pr., AY 304, BY 306, BY 309, and junior standing.**

Species of turf crops in relation to latitude, soil type, shading, establishment, fertility, and maintenance.

**406. Commercial Fertilizers (3). Lec. 3. Winter. Pr., AY 304, 305 or 307, or by special permission of instructor; also junior standing.**

Raw material reserves; manufacture, and properties of fertilizer materials; properties and formulation of mixtures; relative efficiency of various plant nutrient sources; and related agronomic problems.

**407. Soil Management (5). Lec. 5. Summer. Pr., AY 304, AY 305, or AY 307, and junior standing.**

Physical, chemical and biological properties of soils and their management. An advanced course designed for students in Vocational Agriculture. Either AY 402 or AY 407, but not both, may be used to satisfy the minimum requirement for the Master's degree.

408. **Soil Resources and Conservation (5).** Lec. 4, Lab. 2. Pr., AY 304, 305 or 307 and junior standing.  
Soils as a natural resource for land-use planning; their classification and management for crop production, recreation, and urban and industrial development.
409. **Seed Production (3).** Lec. 2, Lab. 2. Spring, odd years. Pr., AY 201, 401 and junior standing.  
Methods and factors affecting production, storage, and processing seed.
410. **Methods of Plant Breeding (3).** Lec. 2, Lab. 2. Fall, even years. Pr., ZY 300 and junior standing.  
A general course in the principles and methods of plant breeding.
411. **Soil Management (3).** Lec. 4. Pr., AY 304, 305 or 307 and graduate standing.  
Classification, physical properties, moisture, organic matter, and pH of soils, and their management with respect to these properties. (Credit for both AY 411 and AY 402, or AY 407 may not be used to meet requirements for the Master's degree.)
412. **Advanced Forage Crops (3).** Lec. 4. Pr., AY 401 and graduate standing.  
Forage species and mixtures, their establishment, maintenance and management for different soils and systems of grazing. (Credit for both AY 412 and AY 403 may not be used to meet requirements for the Master's degree.)
453. **Geomorphology (5).** Lec. 4, Lab. 2. Winter, even years. Pr., AY 304, 306, and senior standing.  
Structure and physiography of the earth's crust and its relation to soil parent material.
454. **Soil Genesis and Classification (5).** Spring, even years. Pr., AY 453 and senior standing.  
Factors and processes influencing soil formation, and the systems of classification.
455. **Soil Physics (5).** Winter, even years. Pr., AY 304 and junior standing.  
Lectures and demonstrations to illustrate fundamental physical properties of soils.

## GRADUATE COURSES

601. **Agronomy Problems (1-5).** Credit to be arranged.  
Conferences, problems, and assigned reading in soils and crops, including results of agronomic research from the substations and experiment fields.
602. **Plant Biological Chemistry (5).** Fall, odd years. Pr., CH 203 or CH 207.  
Biochemical reactions and factors influencing them. Major emphasis is placed on those reactions concerning plants.
606. **Soil Microbiology (5).** Lec. 3, Lab. 4. Spring, odd years. Pr., AY 402 and VM 200.  
Soil microorganisms and their physiological processes related to soil development and plant nutrition. The role of microorganisms affecting the chemical and physical properties of soils will be studied, with emphasis on the cyclical transformations of nitrogen, phosphorus, carbon, and sulfur.
608. **Experimental Methods (5).** Fall, even years.  
Experimentation in the agricultural sciences including experimental techniques, interpretation of research data, use of library references and preparation of publications; and consists of problems, assigned readings, and lectures.
613. **Theories and Applications in Agronomic Research (2).**
615. **Seminar in Genetics (1).** Pr., ZY 300.  
Reports will be presented by students and staff members on current research and the literature in the field of genetics.
616. **Advanced Plant Breeding (5).** Lec. 4, Lab. 2. Winter, even years. Pr., ZY 300.  
Principles, methods, and techniques involved in plant breeding. Laboratory work will consist of studying active plant breeding programs, studying pollination techniques, and making pollinations. A term paper will be required.
617. **Experimental Evolution (5).** Spring, even years. Pr., ZY 300 and AY 616.  
A study of the factors affecting the evolution of species.
618. **Crop Ecology (5).** Winter, even years. Pr., BY 306, 413, and AY 402.  
Environmental factors influencing the growing of crop plants.
619. **Theories in Forage Crops Management (5).** Lec. 3, Lab. 4. Winter, odd years. Pr., BY 306, 309, AY 402 and 403.  
Principles involved in successful establishment, maintenance and management of crops used for grazing, hay and silage.
620. **Philosophy and Interpretation of Experimental Research (3).** Lec. 4. Pr., graduate standing.  
Systematic study of the principles and methods of experimental research; the utility of experimental designs; and the utilization of statistical and graphical aids in the interpretation of data. Mathematical comparisons of the efficiency of designs and calculations of statistical values are not a part of this course.

654. **Advanced Soil Fertility (5).** Spring, odd years. Pr., CH 206, AY 402 and 606. Composition and properties of soils in relation to the nutrition and growth of plants.
655. **Soil and Plant Analysis (5).** Lec. 2, Lab. 6. Winter, odd years. Pr., CH 206 and AY 402. Principles, methods, and techniques of quantitative chemical analysis of soils and plants applicable to soil science.
656. **Soil Mineralogy (5).** Lec. 4, Lab. 2. Fall, even years. Crystal structure and properties of the more important soil and clay minerals combined with identification techniques involving X-ray, differential thermal analysis, electron microscopy and petrographic microscopy.
657. **Advanced Soil Chemistry (5).** Fall, odd years. Pr., CH 409, AY 655 and 656. Physico-chemical properties of soil colloids.
658. **Advanced Soil Physics (5).** Lec. 2, Lab. 6. Pr., MH 263, PS 205-206, and AY 455. Physical properties of soils in relation to plant growth. Emphasis is placed on methods of measuring soil physical properties and the interpretation of these measurements in terms of plant growth.
699. **Research and Thesis.** Credit to be arranged. Research and thesis on problems related to crop production, plant breeding, soil fertility and soil chemistry.
799. **Doctoral Research and Dissertation.** Credit to be arranged.

## Air Science (AF)

### BASIC COURSE

#### First Year (Freshman)

##### Air Science 1.

101. **Foundation of Aerospace Power (1).** Lec. 3, Drill 2. An introductory examination of the factors of aerospace power, major ideological conflicts, requirements for military forces in being, responsibilities of citizenship, development and traditions of the military profession, role and attributes of the professional officer in American democracy, organization of the armed forces as factors in the preservation of national security, and the United States Air Force.
102. **Leadership Laboratory (1).** Drill 2. Drill field activities of the cadet flight, squadron, group, and wing.
103. **Leadership Laboratory (1).** Drill 2. Drill field activities of the cadet flight, squadron, group, and wing.

#### Second Year (Sophomore)

##### Air Science 2. (Prerequisite Air Science 1 or as determined by the Professor of Air Science.)

201. **World Military Systems (1).** Lec. 2, Drill 2. A comparison of the mission, organization and functions of free world land and naval forces.
202. **World Military Systems (1).** Lec. 2, Drill 2. A comparison of functions and characteristics of free world air forces and their place in allied regional security organizations.
203. **World Military Systems (1).** Lec. 2, Drill 2. A study of communist land, sea and air forces and communist regional security organizations, followed by an exploration of trends in development and employment of military power and their impact on world affairs.

### ADVANCED COURSE

#### Third Year (Junior)

##### Air Science 3. (Prerequisite Air Science 1 and 2, or as determined by the Professor of Air Science.)

301. **Growth and Development of Aerospace Power (3).** Lec. 4, Drill 2. A survey of the nature of war followed by a study of the development of air power in the United States.
302. **Growth and Development of Aerospace Power (3).** Lec. 4, Drill 2. A study of the mission and organization of the Defense Department; air force concepts, doctrine, and employment.
303. **Growth and Development of Aerospace Power (3).** Lec. 4, Drill 2. A study of astronautics and space operations, and the future development of aerospace power.

## Fourth Year (Senior)

**Air Science 4.** (Prerequisite Air Science 3 or as determined by the Professor of Air Science.)

401. **Weather and Navigation (3).** Lec. 4, Drill 2.

An introduction to the weather and navigational aspects of airmanship, such as temperature, pressure, air masses, precipitation, weather charts, and dead reckoning navigation. Military aspects of world political geography, dealing with globes and maps and the geography of climate.

402. **Military Aspects of World Political Geography (3).** Lec. 4, Drill 2.

Concepts, maps, and charts; factors of power, and geographic influences upon political problems with a geopolitical analysis of the strategic areas.

403. **International Relations (3).** Lec. 4, Drill 2.

A study of the major factors underlying international tensions and attempts to alleviate these tensions. The Air Force Officer—material to help the cadet make a rapid, effective adjustment to active duty as an officer in the United States Air Force.

**Animal Science (AH)**

*Professors Warren, Anthony, Salmon and Prickett*  
*Associate Professors Squiers, Turney, Patterson, Strength, Wiggins,*  
*Harris, Tucker and Smith*  
*Assistant Professor Huffman*  
*Instructor Gray*  
*Professor Emeritus Grimes*

200. **Introductory Animal Husbandry (5).** Lec. 4, Lab. 2. Fall, Winter, Spring.

A basic course designed to orient the student and provide some understanding of the scope and importance of the field. The importance of livestock to agriculture and to the nutrition of people. The role of nutrition, breeding, selection and management in livestock production.

204. **Animal Biochemistry and Nutrition (5).** Fall, Winter, Spring. Pr., CH 104.

Principles of animal biochemistry and nutrition and the nutritional requirements of farm animals.

301. **Livestock Judging (3).** Lec. 1, Lab. 4. Winter, Spring. Pr., AH 200.

Theory and practice in the selection of beef cattle, swine, sheep, and horses.

302. **Feeds and Feeding (3).** Fall, Spring. Pr., AH 204.

Principles and practices of balancing and compounding of rations for beef cattle, sheep, and swine.

303. **Livestock Production (5).** Lec. 4, Lab. 2. Winter. Pr., AH 204.

Efficient practices for selection and management of beef cattle, sheep, and swine. For students in Vocational Agriculture and those whose curricula do not include AH 401 and AH 402. Ten or more hours of credit in AH 401, AH 402, or AH 405 excludes credit for AH 303.

304. **Meats (3).** Lec. 1, Lab. 4. Fall, Spring. Pr., AH 200.

Study and practice of slaughtering and cutting carcasses of cattle, sheep and hogs. Curing and processing procedures will be considered. Factors affecting slaughtering and cutting yields and costs and the basic principles of quality meat selection and grading will be stressed.

308. **Meats Judging (3).** Lec. 1, Lab. 4. Fall. Pr., AH 304.

Theory and practice in the selection and grading of carcasses and wholesale cuts of beef, pork, and lamb.

401. **Swine Production (5).** Lec. 4, Lab. 2. Fall, Spring. Pr., AH 200, AH 204, junior standing.

Practical problems involved in the breeding, feeding, and management of swine for economic production.

402. **Beef Cattle Production (5).** Lec. 4, Lab. 2. Fall, Winter. Pr., AH 200, AH 204, and junior standing.

Practical phases of breeding, feeding, and management of beef cattle for economic production.

403. **Animal Breedings (5).** Winter. Pr., ZY 300 and junior standing.

Application of genetic principles to the breeding of cattle, sheep, and swine. Studies of different systems of breeding and selection and their related efficiencies for livestock improvement.

404. **Market Classes and Grades of Livestock (3).** Lec. 2, Lab. 2. Fall, Spring. Pr., AH 200.

Grading, classing, and marketing livestock.

405. **Sheep Production (5).** Lec. 4, Lab. 2. Spring. Pr., AH 200, AH 204, and junior standing.  
Types and breeds of sheep; buildings and equipment; types of sheep raising and flock management; nutritional requirements and feeding; sheep breeding, selection and culling; performance testing; wool grading and marketing; lamb grading and marketing; common diseases and parasites and their control.
406. **Reproduction in Farm Animals (5).** Lec. 4, Lab. 2. Fall. Pr., junior standing.  
Anatomy and physiology of the male and female reproductive tract; hormones governing reproduction; estrus and estrus cycle; ovulation, mating, gestation, parturition; lactation; sperm physiology; collection, storage and dilution of semen; artificial insemination; factors affecting fertility; causes of sterility in males and females, pregnancy tests.
407. **Advanced Livestock Judging (3).** Lec. 1, Lab. 4. Fall. Pr., AH 301 and approval of instructor.  
An advanced course in the selection and grading of livestock.
408. **Applied Animal Nutrition (5).** Winter. Pr., AH 302 and senior standing.  
An advanced study of the principles of animal nutrition and their application to the production of farm animals, including the study of physiology of nutrition, metabolism of nutrients and recent nutritional developments.
411. **Undergraduate Seminar (1).** Pr., senior standing.  
Lectures, discussions and literature reviews by staff, students and guest lecturers.
450. **Advanced Animal Nutrition and Livestock Feeding (3).** Lec. 4. Pr., graduate standing.  
Principles of nutrition, nutritional requirements, compounding of rations, role of additives in livestock feeds and study of newer research findings.
451. **Breeding and Genetic Improvement of Farm Animals (3).** Lec. 4. Pr., graduate standing.  
A study of basic genetic principles and their application to the breeding of farm animals. Systems of breeding and selection.

#### GRADUATE COURSES

##### (Graduate Standing Required)

603. **Methods of Nutrition and Biochemistry (5).**  
Methodology including chemical, photometric, biological, and microbiological procedures used in nutritional and biochemical investigations.
604. **Proteins, Amino Acids and Related Nitrogenous Compounds (5).** Pr., CH 418 or equivalent.  
The nutritional importance of these substances and their relation to growth, reproduction and health of animals.
605. **Carbohydrates and Fats and Energy Metabolism (5).** Pr., CH 418 or equivalent.  
The contribution of carbohydrates and fats as cell constituents and sources of fuel in animal metabolism.
607. **Comparative Animal Nutrition (5).** Pr., AH 408.  
Advanced studies of the comparative nutritional requirements in beef cattle, sheep, swine and laboratory animals.
608. **Advanced Reproduction in Farm Animals (5).** Pr., AH 406, ZY 424.  
Physiology and endocrinology of reproduction.
609. **Advanced Beef Cattle Production (5).**  
Advanced studies relating to the production of beef cattle.
610. **Advanced Swine Production (5).**  
Advanced studies of swine production and its place in Alabama agriculture.
611. **Seminar.** Credit to be arranged.
612. **Genetics of Populations (5).** Pr., AH 403.  
Genetic composition of populations and factors affecting rates of change and conditions of equilibrium.
613. **Vitamins (5).** Pr., CH 208 and satisfactory courses in animal nutrition.  
The specific functions and chemistry of the vitamins.
614. **Minerals (5).** Pr., CH 208 and satisfactory courses in animal nutrition.  
The specific functions of minerals in animal metabolism.
615. **Nutritional Interrelations (5).** Pr., CH 420.  
Specific metabolic relationships among vitamins, amino acids, fats, carbohydrates and minerals and the effect of nutritional antagonists.
616. **Enzymes (5).** Pr., CH 418 or equivalent.  
The chemistry, mechanism of action and role of enzymes in metabolism.

617. **Microbial Biochemistry (5).** Pr., 5 hrs. of microbiology and departmental approval.  
The anatomy, growth and metabolism of the bacterial cell with emphasis on the biochemical makeup of the cell and the regulation of its activities; the use of microorganisms for quantitative assays.
618. **Current Problems and Practices in Livestock Farming (5).** Summer.  
Intensive studies of new research findings and their application to livestock production on Alabama farms. Primarily for Vocational Agriculture Teachers and County Extension Workers.
619. **Experimental Methods (5).** Pr., Satisfactory courses in statistics.  
Research methods in the animal sciences including experimental techniques, interpretation of research data and preparation of publications.
620. **Experimental Pathology of Metabolic Diseases (5).** Winter, by arrangement. Pr., VM 418, satisfactory courses in histology, biochemistry, physiology and general pathology.  
A comprehensive study of the structural and functional changes associated with metabolic diseases.
621. **Histochemistry (5).** Spring, by arrangement. Pr., AH 620.  
Application and evaluation of histochemical and cytochemical methods in the study of cellular constituents in tissues of normal animals as well as those showing metabolic aberrances.
690. **Special Problems. (1-5 hours. Credit to be arranged.)**  
Conference problems, assigned reading and reports in one or more of the following major fields: (a) animal biochemistry and nutrition, (b) animal breeding and genetics, (c) physiology of reproduction, (d) nutritional pathology, (e) animal production, (f) experimental pathology, and (g) histochemistry.
699. **Research and Thesis. Credit to be arranged.**  
Research and thesis may be on technical laboratory problems or on problems directly related to beef cattle, sheep or swine.
799. **Doctoral Research and Dissertation. Credit to be arranged.**

### Architecture (AR)

*Professors Burkhardt, Elliott, and McMinn*

*Associate Professors Prestridge\*, Schaer, Thomasson, and Wells*

*Assistant Professors Brisson, Carter, Cole, Davis, Ferrari, Levine,*

*Millard, Pfeil, and Strickland*

- 101-2-3. **Basic Design (4-4-4).** Lab. 12-12-12.  
Correlated study of the fundamental relationships basic to all design problems. (For students with advanced standing, these three courses may be completed in one Summer Quarter.)
- 201-2-3. **Architectural Design (4-4-4).** Lec. 1-1-1, Lab. 9-9-9. Pr., AR 103.  
Principles of spatial composition and structural organization; approaches to architectural design by the analysis of design determinants—9 hours per week in design laboratory. One hour per week of discussions and laboratory criticism.
233. **Materials and Construction (3).** Lec. 3.  
Physical and structural properties of natural and synthetic building materials; analysis of their limitations and combinations in the construction of buildings; systems of construction. Lectures, readings, research and reports.
- 271-2-3. **Architectural Graphics (2-2-2).** Lab. 6-6-6. Pr., AR 103, AT 103.  
Advanced drawing and composition, developing abilities which may be applied in principle to the drawing problems that an architectural designer may face. Various media, discussions, exercises.
- 301-2-3. **Architectural Design (5-5-5).** Lab. 15-15-15. Pr., AR 203. Coreq., BT 220.  
Admission only upon recommendation of the Committee on Design.  
Analysis and solution of buildings of moderate complexity, with emphasis on domestic, civic, and recreational problems; increased attention to construction and finish details. Research, discussions, drawings, models.
360. **Appreciation of Architecture (3).** General elective. Pr., sophomore standing. (Not open to AR and ID students.)  
A survey of architectural development with particular attention to American and contemporary examples. Illustrated lectures, readings, essays.
- 361-2-3. **History and Theory of Architecture (3-3-3).** Pr., AR 203, BT 220.  
An analysis of cultural institutions of the past and the study of the principles of planning and architectural composition, town planning, and landscape architecture as resulting from these forces and structural knowledge of the time. Study of the Ancient, Medieval, and Oriental cultures. Illustrated lectures, readings, drawings, and reports.

\* On leave.



- 370. Spaces for Living (3).** General elective. Pr., junior standing. (Not open to AR and ID students.)  
A survey of contemporary concepts of design, spatial organization, materials, furnishings, and gardens in relation to all major types of residential architecture. Illustrated lectures, readings, reports.
- 374. Planning (2).** Lec. 2.  
Introduction to principles of city and regional planning. Consideration of the influences which shape urban development.
- 401-2-3. Architectural Design (5-5-5).** Lab. 15-15-15. Pr., AR 303, Coreq., BT 313.  
Analysis and solution of buildings of advanced complexity, with increased emphasis on the relation between space organization and the structural system. Research, discussions, drawings, models.
- 423. Working Drawings (2).** Lab. 6.  
Emphasis is given to the preparation and organization of working drawings and specifications for a major architectural project.
- 461-2-3. History and Theory of Architecture IV-V-VI (3-3-3).** Pr., AR 363.  
Continuation of AR 363. Study of Renaissance, Baroque, Colonial American, and Modern cultures. Illustrated lectures, readings, drawings, and reports.
- 501-2. Architectural Design (5-5).** Lab. 15-15. Pr., AR 403. Admission upon recommendation of the Committee on Design.  
Analysis and design of buildings of advanced complexity, with emphasis on multi-story commercial and institutional projects; group planning and advanced site study. Research, reports, discussions, drawings, models. A scheme for a building executed as a minor problem in this course will be fully developed in AR 502.
- 503. Architectural Design (7).** Lab. 21. Pr., AR 502, AR 512.  
The development of a major design problem under direction of the Committee on Design. Drawings, models, details, and written explanations, oral presentation for jury consideration.
- 512. Design Research (2).** Pr., AR 501.  
The selection and comprehensive programming of a terminal problem in architecture to be executed in AR 503.
- 521-22. Professional Practice (5-5).** Pr., fifth year standing.  
Study of procedures in architectural practice; construction methods, estimation of quantities and costs. Office organization; legal requirements; professional organizations and relations; civic responsibility, professional ethics.
- 558. Seminar in Contemporary Concepts (5).** Pr., AR 463.  
A study of current achievements in world architecture with emphasis on broad movements and emerging patterns. Research, directed reading, reports, and discussion.
- 559. Seminar in Historical Problems (5).** Pr., AR 463.  
Open to students who have shown ability, initiative, and industry in developing individual projects. Research, reports, and drawings under supervision on approved topics.
- 560. The Architect and Society (2).** Pr., 4th year standing.  
A study of the social, economic, and political factors which have influenced the contemporary expression of architectural design and practice. Analysis of great works and philosophies which led the way to new approaches in design. Appreciation of aesthetics and function as applied to form. Lectures, outside reading and reports.
- 561. Seminar in Urban Design (2).** Pr., 4th year standing.  
Directed reading and discussion of contemporary developments in urban planning concepts and solutions. Reports and drawings.
- 562. Seminar in Technological Problems (3).** Pr., 4th year standing.  
A study of current technological advances in the building industry and evaluation of their impact upon architecture.
- 571. Honors Program.** Credit to be arranged up to 5 hrs. Pr., 4th year standing.  
Admission only by the Committee on Honors Program. Development of an area of concentration through independent study. Scope of work and its evaluation to be determined by the Committee. May be taken more than one quarter.

**Courses specifically required in the Interior Design curriculum (ID)**

- 215-16. Elements of Interior Design (3-2).** Pr., AR 103.  
An introductory survey of the profession of interior design including professional procedures, relationships, ethics, correlation with architecture and other arts. Lectures, readings, discussions and research.
- 305-6-7. Interior Design (5-5-5).** Lab. 15-15-15. Pr., AR 203. Admission upon recommendation of the Committee on Design.  
Analysis and solution of interiors of moderate complexity, with emphasis on domestic and commercial problems. Research, discussion, drawings, models.

**365-6. Period Interiors (2-2).**

A survey of the development of interior spaces, furniture, fabrics, and accessories from pre-Renaissance to 1900. Illustrated lectures, readings, reports, and field trips.

**367. Contemporary Interiors (2). Lec. 2. Pr., AR 366.**

A survey of the fundamental aspects of interior design, spatial order and characteristics, furniture and fabric design, from 1900 to date. Illustrated lectures, readings, reports.

**405-6. Interior Design (5-5). Lab. 15-15. Pr., AR 307. Admission upon recommendation of the Committee on Design.**

Analysis and solution of interiors of advanced complexity, with emphasis on institutional and public problems. Research, discussions, drawings, models.

**407. Interior Design (5). Lab. 15. Pr., AR 406, Coreq., AR 432, AR 435.**

The development of a major design problem under the direction of the Committee on Design. Drawings, models, details; oral presentation for jury consideration.

**408. Interior Design Research (2). Lab. 6. Pr., AR 405. Coreq., AR 406, AR 442.**

The selection and comprehensive programming of a terminal problem in interior design to be executed in AR 407.

**432. Materials and Finishes (2). Lab. 6. Coreq., AR 407.**

Detailed determination of materials, finishes, costs as related to terminal problems accomplished under AR 407.

**435. Methods of Interior Design (5). Lab. 15. Coreq., AR 407.**

Detailed design of furniture and/or furnishings included in terminal problem (AR 407), together with a fabrication of at least one item of furniture or furnishings at scale to be determined by staff.

**441-42. Professional Practice (2-2). Lab. 6-6.**

Office procedure and methods for interior designers; the technique and execution of working drawings for buildings, cabinetry and interior details; specifications. Discussions, drawings, inspections, reports.

**Courses specifically required in the Industrial Design curriculum (IN)****210. Industrial Design I (5). Lec. 1, Lab. 12. Pr., AR 103. Admission only upon recommendation of the Committee on Design.**

An approach to the problems of visual communication. Perception theory, design fundamentals; color, figure organization, movement and balance, proportion and rhythm.

**211. Industrial Design II (5). Lec. 1, Lab. 12. Pr., AR 210.**

An extension of principles encountered in Industrial Design I. A study and analysis of Industrial Design Fundamentals.

**212. Industrial Design III (5). Lec. 1, Lab. 12. Pr., AR 211.**

A study of structural and functional relationship of design elements; convenience, utility, safety, maintenance.

**221. Materials & Technology (5). Lec. 5. Pr., sophomore standing.**

Introduction to the properties and use of various materials in manufacture and a study of the machine and tool processes used by industry. Survey from the Designer's viewpoint.

**222. Technical Illustration (5). Lec. 5. Pr., sophomore standing.**

Introduction to axonometric drawing, perspective, and freehand graphics, as used by Industrial Designers.

**223. Industrial Design Methods (5). Lec. 5. Pr., sophomore standing.**

An introduction to the methods and organizational procedures employed in the analysis and solutions of design problems. Survey of philosophies and theories of design.

**310. Industrial Design IV (5). Lab. 15. Pr., AR 212, AR 222, AR 223, EG 105. Admission only upon recommendation of Committee on Design.**

Design of machines and instruments. Arrangements of elements in systems.

**311. Industrial Design V (5). Lab. 15. Pr., AR 310, PS 204.**

Design of domestic and office equipment.

**312. Industrial Design VI (5). Lab. 15. Pr., AR 311.**

Exhibition and packaging problems.

**410. Industrial Design VII (5). Lab. 15. Pr., AR 312.**

Industrialized building. Study of building components produced by industrial means.

**411. Industrial Design VIII (5). Lab. 15. Pr., AR 410. Admission only upon recommendation of Committee on Design.**

Design or re-design of products of advanced complexity.

**412. Industrial Design Thesis (5). Lab. 15. Pr., AR 411.**

Study of a project involving all design phases; project of the student's own selection and approved by the Committee on Design. Presentation of graphics, models and written explanations, and oral presentation before a Design Jury. The thesis material will be retained by the Department for one year.

**565. Seminar in Industrial Design (5). Lec. 5. Pr., fourth year standing.**

Development of individual projects. Research, design, reports, on approved topics.

**Art (AT)***Head Professor Applebee**Professor Sykes**Associate Professors Abney, Kettunen\*, and Williams**Assistant Professors Ross, and Taughner**Instructors Gibson, Kinnaird, Mitchell\*, and Walker*

- 101-2-3. **Basic Drawing (2-2-2).** Lab. (6-6-6).  
Representational drawing; proportion clarification of form, light, and dark, etc.
105. **Drawing I (5).** Lab. 15.  
Representational drawing. Line, light and dark.
106. **Drawing II (5).** Lec. 2, Lab. 9. Pr., AT 105.  
Emphasis on creativity and pictorial organization. Interpretive drawing.
107. **Drawing III (5).** Lab. 15. Pr., AT 105.  
Drawing in various media from casts and models to develop feeling for form, movement and proportions.
113. **Perspective (3).** Lec. 2, Lab. 3. Pr., AT 105.  
Linear perspective. Shadows, Reflections.
181. **Design Fundamentals I (5).** Lec. 2, Lab. 9.  
Plastic elements. Relationship of the arts. Problems in basic design.
182. **Design Fundamentals II (5).** Lab. 15. Pr., AT 105 and 181.  
Relationship of materials and techniques to form. Perception theories. Applied problems.
205. **Figure Drawing I (5).** Lab. 15. Pr., AT 107.  
Drawing from the model in various media with emphasis on proportions, interpretation and expression.
211. **Lettering (5).** Lec. 5. Pr., AT 181.  
Historical development of letters. Anatomy of letters. Spacing. Drill exercises with pen. Fundamental alphabets and compositions of body matter lettered directly.
212. **Graphic Processes (5).** Lec. 5. Pr., sophomore standing.  
Printing processes, photomechanical reproduction, copy-fitting, paper manufacture and usage, related subjects.
215. **Figure Construction (5).** Lec. 3, Lab. 6. Pr., AT 205.  
Lectures deal with form, function and manner of operation of skeletal and muscular parts of the body. Drawing from casts, models and skeleton.
217. **Delineation (5).** Lab. 15. Pr., AT 222.  
The development of facility and understanding in the drawing of three dimensional forms. Emphasis on the function and the techniques of presentation.
222. **Painting I (5).** Lab. 15. Pr., AT 106 and 181.  
Transparent water color. Study of the medium and of picture structure. Exercises in still life, figure and landscape painting.
224. **Painting II (5).** Lab. 15. Pr., AT 222.  
Opaque water color. Techniques and properties of the medium. Objective and subjective handlings as a further extension and application of the plastic elements.
227. **Sculpture I (5).** Lab. 15.  
Three dimensional expression. Clay and other media.
305. **Printmaking I (5).** Lab. 15. Pr., recommendation of faculty committee.  
Relief print media. Woodblock, linoleum cut, wood engraving.
- 307-8. **Figure Drawing II and III (5-5).** Lab. 15-15. Pr., AT 205.  
Drawing from the model in various media, with emphasis on construction, interpretation and expression.
317. **Packaging (5).** Pr., junior standing and AT 211.  
The study of all types of package design and the materials used. New applications to everyday products.
322. **Painting III (5).** Lab. 15. Pr., AT 222.  
Introduction to oil painting. Exploiting of materials and techniques with still life and the figure as a means for aesthetic exploration.
324. **Painting IV (5).** Lab. 15. Pr., AT 224 and 322.  
Painting with optional media and subject matter.
327. **Sculpture II (5).** Lab. 15. Pr., AT 227.  
Advanced problems in three-dimensional expression. Emphasis placed on idea, form and technique.

\* Temporary.

332. **American Painting and Sculpture (3). General elective.**  
A survey of American art and artists from the Colonial period to the present day. Illustrated lectures, readings.
338. **Art History I (5). Pr., sophomore standing.**  
The chronological development of Western painting and sculpture from pre-historic through modern times as related to the cultural setting. Illustrated lectures.
339. **Art History II (5). Pr., AT 338.**  
An examination of ideas, philosophies common to all periods of art history, and a comparison of periods in terms other than chronological development. Illustrated lectures, readings, drawings, and reports.
342. **Elementary School Art (5). Lec. 2, Lab. 8.**  
Materials and methods for the development of art activities in elementary schools; exercises in expressive drawing, painting, design and simple lettering.
355. **Illustration I (5). Lab. 15. Pr., AT 215.**  
Basic problems in illustration emphasizing both aesthetic and functional aspects. Drawings and designs for line and halftone reproductions.
361. **Fashion I (5). Lab. 15. Pr., AT 182, and AT 215.**  
Drawing the fashion figure, employing basic types of rendering used in fashion advertising.
381. **Visual Design I (5). Lab. 15. Pr., AT 182, AT 211, and AT 212. Admission only upon recommendation of the Committee on Design.**  
Fundamentals of graphic design. Historical background of printing types. Analysis and pencil studies of basic type faces. Basic techniques of typographical layout. Basic photography. Preparation of art copy for printing. The trademark. Packaging graphics.
382. **Visual Design II (5). Lab. 15. Pr., AT 381.**  
Italic types. Problems combining copy-fitting with basic illustration. Preparation of color-separation art copy. Creative expression with letter forms. Letterpress and photo-offset production. The poster. Packaging graphics.
383. **Visual Design III (5). Lab. 15. Pr., AT 382.**  
Script lettering. Planned photographic illustration. Creative design as communication. The trademark. Silkscreen production. Research in pertinent art movements. Packaging graphics.
405. **Printmaking II (5). Lab. 15. Pr., recommendation of faculty committee.**  
Intaglio print media. Etching and metal engraving.
406. **Printmaking III (5). Lab. 15. Pr., junior standing and recommendation of faculty committee.**  
Planographic print media. Stone and metal-plate lithography.
422. **Painting V (5). Lab. 15. Pr., AT 324 and junior standing.**  
Painting with optional media and subject matter.
423. **Painting VI (5). Lab. 15. Pr., AT 422 and junior standing.**  
The fundamental problems of painting figures. Experimenting with various means of interpreting the figure in both abstract and realistic compositions.
431. **Contemporary Art (3). General Elective.**  
A survey of modern painting, sculpture and industrial design. Illustrated lectures, readings.
- 432-3. **Seminar in Art Problems (5-5). Pr., senior standing.**  
Open to students who have shown ability, initiative and industry in carrying out individual projects. Research reports, and drawings under supervision on approved topics.
434. **Seminar in Art History Problems (5). Pr., senior standing.**  
Open to students who have shown ability, initiative, and industry in carrying out individual projects. Research, reports, and drawings under supervision of approved historical topics.
442. **Art in Education (5). Lec. 3, Lab. 6. Pr., junior standing.**  
Lectures, reading and research concerning principles and objectives of pertinent phases of Art for the purpose of understanding their significance in teaching at all levels. Laboratory experimentation in basic procedures of painting, graphic arts and sculpture as a means of relating the art experience to educational practice. Emphasis is placed upon creativity rather than technical skill.
456. **Illustration II (5). Lab. 15. Pr., AT 355.**  
Sustained problems in illustration emphasizing both subjective and objective treatments.
462. **Fashion II (5). Lab. 15. Pr., AT 361.**  
Problems in advanced rendering for fashion advertising; figured and textured fabrics, furs, and accessories.
463. **Fashion III (5). Lab. 15. Pr., AT 462.**  
Design of clothing in all categories; historic adaptations; wardrobe color coordination; personality styling.
481. **Visual Design IV (5). Lab. 15. Pr., AT 383.**  
Original student alphabet with application. Research in pertinent art movements. The brochure. Newspaper layout. Television project. Three-dimensional display.

**482. Visual Design V (5). Lab. 15. Pr., AT 481.**

Catalog or booklet design. Related series of layouts. Humor in graphic design. Optional television or illustration projects. Container with related display.

**496. Thesis (5). Lab. 15. Pr., senior standing.**

A terminal Art project initiated by the student and accompanied by a written analysis and evaluation. Both problems and written matter will be defended orally by the student before a faculty group.

**GRADUATE COURSES****605-6-7-8. Graduate Design (5-5-5-5). Lab. 15-15-15-15.**

Advanced programs of creative design in the student's elected field.

**641-2-3. Graduate Research in Art Problems I-II-III (5-5-5).**

Research on approved topics in the student's special field. Conferences and reports.

**699. Research and Thesis. Credit to be arranged. All quarters. Pr., AT 496 or equivalent.**

A major art problem consisting of a sustained single project or a logical sequence of shorter projects. The candidate will be required to conceive and execute a work or works exhibiting pronounced creative ability and technical proficiency. Upon recommendation of the major professor, a written essay may be required to accompany the project. All drawings, paintings, and models connected with this work will be retained by the Department of Art.

**Botany and Plant Pathology (BY)**

*Professors Lyle, Cairns, and D. Davis*

*Associate Professors Clark, Curl, N. Davis, Funderburk, and Marshall*

*Assistant Professors Goslin and Shands*

*Professor Emeritus Seal*

**101. General Botany (5). Lec. Dem. 5. All quarters.**

Introduction to botany dealing with the development, structure, and function of plants. Precedes all advanced courses in botany.

**102. General Botany (5). Lec. Dem. 5. All quarters. Pr., BY 101.**

Principal natural groups of plants embracing their particular structure, habits, reproduction, and relationships.

**205. Pharmaceutical Botany (5). Lec. Dem. 5. Fall, Spring.**

Macroscopic and microscopic characteristics of the various plant organs. Emphasis placed on drug yielding plants. Restricted to students in Pharmacy.

**306. Fundamentals of Plant Physiology (5). Lec. 3, Lab. 4. Pr., BY 101, CH 103-104.**

General aspects of fundamental life processes of plants involving physiological, structural, and environmental relationships.

**308. Plants and Man (3). Lec. 3. Summer. General elective.**

Introduction to the botanical characteristics of most categories of plants including their kinship, origin, past and present distribution, and various ways utilized, as timbers, fruits and other foods, fibers, forage, ornamentals, drugs, etc. Local field trips will be made. (Restricted to students who have had no more than 5 hours credit in botany.)

**309. General Plant Pathology (5). Lec. 3, Lab. 4. Winter, Spring. Pr., BY 101-2.**

Nature cause, and control of plant diseases illustrated by studies of the more common diseases of cultivated crops.

**310. Forest Pathology (5). Lec. 3, Lab. 4. Winter, Spring. Pr., BY 101-2.**

Diseases of trees in forests, parks, streets, and nurseries, as well as the more important fungi causing rots of timber and its products.

**401. Experimental Statistics for Biological Sciences (5). Lec. 4, Lab. 2. Fall. Pr., MH 111 or MH 107 and junior standing.**

Basic concepts of statistical models and use of samples; variation, statistical measures, distribution, tests of significance, analysis of variance and elementary experimental design, factorials, regression, correlation, and chi-square. Intended primarily for advanced undergraduates and as a beginning course for graduate students in biological sciences.

**406. Systematic Botany (5). Lec. 5, Lab. 2. Spring. Pr., BY 101-2 and junior standing.**

Identification and classification of flowering plants. Field trips will be made.

**410. Aquatic Plants (5). Lec. 2, Lab. 6. Summer, even years. Pr., BY 101-2 and junior standing.**

Identification and study of those plants found in or associated with the fresh water features of Alabama. Emphasis will be on plants which have particular economic value in wildlife management or fish culture. Field trips will be taken and a plant collection required.

412. **Principles and Methods in Plant Pathology (5).** Lec. 3, Lab. 4. Winter. Pr., BY 309 or 310 and junior standing.  
Principles governing the development of plant diseases and their control. The laboratory will consist of a study of the techniques used in isolation, culture, and inoculation of plant pathogens.
413. **General Plant Ecology (5).** Lec. 3, Lab. 4. Fall. Pr., BY 306 and junior standing.  
Natural vegetation, environment, and interrelationships between the two with primary emphasis on the Southeastern United States. Field trips will be made.
415. **Developmental Plant Anatomy (5).** Lec. 3, Lab. 4. Winter. Pr., BY 101, CH 104, and junior standing.  
Comparative anatomy of vascular plants, with emphasis on developmental relationships, evolution, and structure. Economically important species will be studied as examples.
416. **Plant Microtechnique (5).** Lec. 2, Lab. 6. Winter. Pr., BY 101, 306 or 415 and junior standing.  
Principles and methods of fixing, imbedding, sectioning, staining, and mounting the various plant organs and organisms for permanent or semipermanent microscope slide preparations.
419. **Principles in Plant Disease Control (3).** Lec. Dem. 4. All quarters. Pr., BY 309 and graduate standing.  
Designed to acquaint the student with such principles of plant disease control as protection, exclusion, eradication, and resistance. The control of important plant pathogens will be considered by each method. Emphasis will be placed on chemical control with antibiotics, fumigants, and fungicides.
420. **Weed Identification and Control (5).** Lec. 3, Lab. 4. Spring. Pr., BY 101 and junior standing.  
Recognition of the more noxious weeds, their ecology, habit of growth, dissemination and the evaluation of the various methods of control.
421. **Weeds (3).** Lec. 3, Lab. 4. Summer and Fall. Pr., BY 101 and graduate standing.  
Identification and control of Alabama weeds. (Credit for both BY 420 and BY 421 may not be used to meet requirements for the Master's degree.)
430. **Nematode Diseases of Plants (3).** Lec. 3. Winter. Pr., BY 101-2, ZY 101 and junior standing.  
Designed to acquaint students in agricultural sciences with the role of nematodes as plant parasites; study of representative plant diseases caused by nematodes; principles and practices of control.
435. **Plant Biology I (5).** Lec. 3, Lab. 4. Summer. Pr., Teaching experience and junior standing.  
Principles of biology as they apply particularly to the development, anatomy, and physiology of higher plants. Restricted to participants in the NSF Summer Institute of Biology. Will be offered in separate section to other qualified students upon sufficient demand.

## GRADUATES ONLY, MAJOR OR MINOR

601. **Design and Analysis of Experiments (5).** Lec. 4, Lab. 2. Winter. Pr., BY 401 or equivalent.  
Analysis and interpretation of data from the more advanced experimental designs; covariance, multiple treatment comparisons, individual degrees of freedom, factorials, incomplete block designs, confounding, fractional replications, size of experiment, efficiency, combining experiments, and methods for increasing precision.
602. **Least Squares Analysis of Experiments (5).** Lec. 4, Lab. 2. Spring. Pr., BY 401 or equivalent.  
Analysis and interpretations of experimental data by least squares procedures; multiple regression, simple and multiple co-variance, discrete and continuous variables, design and analysis of experiments with equal and unequal subclass numbers, missing data, factorials, individual degrees of freedom, matrices.
605. **Advanced Plant Physiology I (5).** Lec. 3, Lab. 4. Fall. Pr., BY 306.  
Water relations and mineral nutrition; internal and external factors affecting the absorption, translocation, utilization, and loss of water and mineral elements by green plants.
606. **Advanced Plant Physiology II (5).** Lec. 3, Lab. 4. Winter, even years. Pr., BY 306.  
Plant growth. Review of literature and laboratory methodology of plant physiological subject matter in the areas of plant growth regulators, mode of action of growth regulators, and factors affecting plant growth.
607. **Advanced Plant Physiology III (5).** Lec. 3, Lab. 4. Spring, odd years. Pr., BY 306, and 5 hrs. of organic chemistry.  
Metabolism; a correlation of cell structures with process and metabolic pathways involved in the synthesis and degradation of foods and their assimilation into protoplasm.



608. **Advanced Systematic Botany (5).** Lec. 2, Lab. 6. Spring. Pr., BY 406.  
Intensive study of special groups of plants.
609. **Mycology (5).** Lec. 2, Lab. 6. Fall. Pr., BY 101-2 and consent of instructor.  
Systematic survey of the fungi with aspects of morphology included. Emphasis will be on the economically important fungi.
610. **Algae (5).** Lec. 2, Lab. 6. Spring, even years. Pr., BY 410 or consent of instructor.  
A general course dealing with the identification, growth, reproduction, distribution, evolution, and economic importance of the algae.
611. **Ecology of Soil Fungi (5).** Lec. 2, Lab. 6. Fall. Pr., BY 309 or 310, AY 304.  
Quantitative and qualitative consideration of the microbial population of the soil. Relation of physical environment, antagonistic microorganisms, and higher plants on growth and survival of soil fungi. Emphasis will be on methodology for studying soil microflora and plant disease relationships.
612. **Physiology of the Fungi (5).** Lec. 3, Lab. 4. Spring, even years. Pr., BY 306, 607, 609, or consent of instructor.  
Chemical activities of fungi as related to their nutrition, growth, reproduction, and fermentative abilities.
613. **Experimental Plant Ecology (5).** Lec. 2, Lab. 6. Pr., BY 413. Summer.  
Field course covering the methods of obtaining quantitative data on the structure and composition of plant communities as well as the use of instruments for evaluating the environment.
615. **Morphology of Crop Plants (5).** Lec. 3, Lab. 4. Summer. Pr., BY 306, BY 415 or 416.  
Basic principles of reproduction in angiosperms with particular emphasis on their relationships to crop production, plant breeding, and genetics.
616. **Cytology and Cytogenetics (5).** Lec. 3, Lab. 4. Winter. Pr., BY 416 or ZY 308, ZY 300.  
Cellular morphology and living processes, with chromosomal structure, function and behavior, and with the relationship of these factors to evolution.
618. **Diseases of Special Crops (5).** Lec. and Lab. 6. Summer or Fall. Pr., BY 101, BY 309, or 310, BY 412, and BY 430.  
Identification, epidemiology, etiology, and control of the major diseases on various kinds of economic plants, to be selected on the basis of current needs of the students. Subject matter to be presented by various specialists within the department.
620. **Chemical Weed Control (5).** Lec. 3, Lab. 4. Fall or Summer, odd years. Pr., BY 306, BY 406 or 420.  
Application, mode of action, physiological relationships, recent advances, and special weed problems.
625. **Special Problems.** Credit to be arranged.  
A. Cytology; B. Ecology; C. Morphology; D. Mycology; E. Nematology; F. Pathology; G. Physiology; H. Taxonomy; I. Chemical Weed Control.
630. **Advanced Phytonematology (5).** Lec. 3, Lab. 4. Fall. Pr., BY 430.  
Detailed studies of the nematodes parasitic on plants; special emphasis will be given to host-parasite relationships and recent advances in phytonematology.
635. **Biological Processes (5).** Lec. 5. Summer. Pr., BY 435, teaching experience, and graduate standing.  
Designed to acquaint the secondary school teacher with some of the fundamental life-processes, and to illustrate ways in which each of these affects the affairs of man, such as cosmic significance of photosynthesis, algae as a potential source of food, antibiotics, microorganisms in industry. Restricted to participants in the NSF Summer Institute of Biology but will be offered in a separate section to other qualified students upon sufficient demand.
636. **Microbiology (5).** Lec. 3, Lab. 4. Summer. Pr., BY 435 and teaching experience.  
Structure and activities of microorganisms, their distribution and cultivation. The algae, fungi, bacteria, and protozoa are considered particularly as they relate to animal and plant disease, food, industrial uses, sanitation, and immunization. Restricted to participants in the NSF Summer Institute of Biology.
640. **Departmental Forum (1).** Fall, Winter and Spring. Required of all majors, open to all minors.  
Discussions concerning current topics in the various sciences and related fields.
641. **Seminar in Plant Physiology (1).** Fall, Winter, and Spring. May be taken more than once for credit.

650. **Nuclear Science in Agriculture (5).** Lec. 3, Lab. 6. Spring. Pr., Graduate standing with research experience.  
Role of nuclear science in agricultural research with training in the use of radioisotopes and familiarization with the possibilities, limitations, and necessary safety precautions.
699. **Research and Thesis.** Credit to be arranged. May be taken more than one quarter.
799. **Doctoral Research and Dissertation.** Credit to be arranged.

### **Building Technology (BT)**

*Head Professor Orr*

*Professor Marty*

*Assistant Professors Darden, Dean, and Rainer*

104. **Introduction to Building (5).** Lab. 15.  
Survey of the Building Industry; building procedures; study of plans and details; use of drawing tools; elements of estimating. Lectures, readings, drawings.
105. **Drawing and Projections (5).** Lab. 15.  
Application of geometry to orthographic, isometric, cavalier, cabinet, and perspective projections. Exercises in working drawings.
106. **Materials and Construction (5).** Pr., BT 104.  
Structural and finish materials and assembly systems used in buildings. Lectures, reports, readings, drawings.
220. **Mechanics of Structures (5).** Pr., PS 205, MH 202.  
Principles of mechanics as applied to building construction, graphic statics; resolution of external forces; analysis of trusses; centroids; moments of inertia; friction. Lectures, demonstrations, problems.
- 311-2-3. **Structures I-II-III (3-3-3).** Pr., BT 220.  
Study of statically determinate structures including beams, columns, trusses, struts and tension members. Shear and bending moments, torsion, slope and deflection. Problems are worked in reinforced concrete, steel and other structural materials. Lectures, research and problems.
- 367-8-9. **History of Building I-II-III (3-3-3).** Pr., BT 106.  
An analysis of the development and use of construction methods and materials showing the effects of this development on building form from ancient to contemporary times. Illustrated lectures, readings, reports and drawings.
- 411-2-3. **Structures IV-V-VI (3-3-3).** Pr., BT 313.  
Continuation of Structures I-II-III in the field of statically indeterminate structures. Consideration of lateral stability in buildings. Design of foundations. Lectures, research and problems.
421. **Construction Problems I (5).** Lab. 15.  
Solution of practical problems of the type normally encountered in the erection of buildings. Layouts, design of formwork and scaffolding. Material storage and handling. Job organization. Demonstrations, research and drawings.
422. **Construction Problems II (5).** Lab. 15. Pr., BT 312 and 421.  
Continuation of BT 421; solution of problems taken from working drawings, specifications, shop drawings and contract documents. Discussions, research, estimates, computations, drawings.
433. **Construction Methods and Estimating (5).** Pr., BT 160 and 312.  
Material quantities; estimating; builder's organization and procedure; job records; builder's liability; labor relations; safety precautions. Preparation of quantity lists from working drawings; lectures, problems.
- 452-3. **Building Equipment I-II (3-3).** Lec. 2, Lab. 3. Each quarter. Pr., PS 206.  
Description and analysis of heating, air conditioning, water supply, plumbing, electrical wiring, motors, elevators, and illumination as related to buildings. Lectures, demonstrations, readings, problems.
490. **Building Construction Thesis (5).** Lab. 15, or (7). Lab. 21. Pr., BT 422, 433 and 4th year standing, third quarter. Admission only upon recommendation of the Faculty Thesis Committee.  
Preparation of detailed cost estimates and construction program of a building, selected with departmental approval; report to include description of building and site, list of quantities of materials, unit prices of materials and labor, detailed cost sheets; bid and contract forms, construction schedule, and methods required. (Candidate will defend thesis orally before staff and guest specialists.)

- 521-2-3. Advanced Structures I-II-III (5-5-5). I, Fall; II, Winter; III, Spring. Pr., BT 413.  
Theory and practical design of complex and long span structures, both in steel and reinforced concrete. Multiple story buildings, towers, arches, vaults, domes, thin shell systems, foundations. Lectures, research and problems.
541. Building Equipment III (2). Lab. 6. Pr., BT 453 and AR 403.  
A continuation of Building Equipment I and II in selected laboratory problems.

## GRADUATE COURSES

- 605-6-7. Graduate Research in Building (5-5-5). All quarters.  
Independent investigation and reports on topics selected by the student with approval of the instructor.
- 621-2-3. Graduate Construction Design (5-5-5). Lab. 15-15-15. All quarters. Pr., BT 523.  
The analysis and solution of complex problems in construction design, with particular emphasis upon practical and economical application to a selected building. Conferences, working drawings, scale models.
699. Research and Thesis. Credit to be arranged. May be taken more than one quarter.  
The analysis and solution of an advanced problem in building. The choice, scope and program of study for the problem must be submitted by the candidate for approval of the department staff during the first week of the quarter.

## Chemical Engineering (CN)

Professors Wingard and Hsu\*

Associate Professors Moore, Findley\*, Hirth, and Vives

201. Chemical Engineering Fundamentals (3). Lec. 2, Lab. 3. Pr., MH 262, PS 201.  
Introduction to chemical engineering and process calculations. Emphasis placed upon programming and the solution of problems by the digital computer.
300. Process Calculations (3). Pr., CN 201.  
This course is a continuation of CN 201. It includes problems relating to the thermophysics, thermochemistry, and more comprehensive problems in fuels, combustion, and chemical metallurgical and petroleum processes.
321. Chemical Process Industries (3).  
Study of inorganic chemical manufacturing processes. Includes flow sheets, process variables, automatic instruments, application of physical chemistry, economics and costs.
322. Organic Process Industries and Thermodynamics (3). Pr., CH 304, CH 407.  
A study of the organic process industries and a brief introduction to thermodynamics.
324. Fluid Mechanics (4). Pr., MH 264, PS 203.  
A study of fluid mechanics, including flow through porous media and fluidized beds.
326. Heat Transfer (3). Pr., CN 324.  
Principles of heat transfer including conduction, conduction-convection and radiation mechanisms, design calculation methods and heat transfer equipment. Includes the study of the unit operation-evaporation.
- 326L. Heat Transfer Laboratory (2). Lab. 6. Coreq., CN 326.  
Laboratory experiments in fluid flow, heat transfer and evaporation.
423. Unit Operations (3). Pr., CN 326.  
Theory and mechanisms of diffusion, humidification and dehumidification, drying, size reduction, filtration and materials handling.
- 423L. Unit Operations Laboratory (2). Lab. 6. Coreq., CN 423.  
Laboratory experiments in drying, air conditioning operations, filtration, crushing, grinding and size separation.
424. Mass Transfer (3). Pr., CN 423.  
Theory and mechanisms of distillation, absorption and extraction.
- 424L. Mass Transfer Laboratory (2). Lab. 6. Coreq., CN 424.  
Laboratory experiments in distillation, absorption and extraction.
426. Engineering Metallurgy (5). Lec. 4, Lab. 3. Pr., CH 408 and junior standing.  
Physical metallurgy with special reference to the effect of mechanical work and heat treatment on the properties of ferrous metals and alloys, and non-ferrous metals and alloys. Titanium, Zirconium, Thorium, Tantalum, and Beryllium also are studied.
430. Computer Principles (2). Pr., MH 361.  
Study of the basic principles of analog and digital computer theory, and applications to the chemical engineering.

\* Part-time Engineering Experiment Station.

432. **Instrumentation (4).** Lec. 2, Lab. 6. Pr., MH 361, PS 203.  
Automatic feedback control, servomechanisms, instrumentation of typical equipment, laboratory work includes performance characteristics of typical instruments and remote-control.
437. **Process Engineering (4).** Lec. 2, Lab. 6. Pr., senior standing and CN 322. Coreq., CN 424.  
Semi-independent work of individuals and small groups. The subject matter relates to the study of the scientific literature, laboratory operations designed to develop a satisfactory process, and pilot plant development and operation; including cost analyses, a market study, and the writing of reports. Principles of report writing are stressed.
440. **Nuclear Engineering (5).** Pr., junior standing in science or engineering and B average except by special permission.  
Includes units and nomenclature, the nuclear chain reactor, radiation, shielding, nuclear properties of materials, instrumentation and control, remote handling, heat transfer with liquid metals, and radioactive waste disposal.
484. **Chemical Engineering Plant Design (4).** Lec. 2, Lab. 6. Pr., CN 437 and senior standing.  
The major responsibility is placed upon individuals or small groups for the optimum design, choosing between alternates, selection of equipment, and the calculation of the required sizes, plant layout, cost analyses and the writing of reports. Comprehensive problems are assigned which usually include heat, materials and economic balances, unit operations and processes, kinetics, and thermodynamics. Some consideration also is given to statistics.
490. **Applied Thermodynamics (5).** Pr., CN 322.  
Thermodynamic properties of fluids, the expansion and compression of fluids, the thermodynamics of solution, physical equilibrium and chemical equilibrium, and important applications to chemical engineering.
491. **Kinetics (4).** Pr., CN 490.  
A study of the rates of homogeneous, heterogeneous, and catalytic reactions, and applications of the rates to the organic process industries.

#### COURSES PRIMARILY FOR GRADUATE STUDENTS

601. **Fluid Flow and Heat Transfer (5).** Fall. Pr., CN 423.
602. **Diffusional Processes I (5).** Winter. Pr., CN 424.  
Evaporation, drying and distillation. Special emphasis on distillation.
603. **Diffusional Processes II (5).** Spring. Pr., CN 424.  
Special emphasis on absorption and extraction.
604. **Advanced Chemical Engineering Thermodynamics (5).** Pr., CN 490.  
Advanced problems in the application of thermodynamics to industrial processes. Special emphasis on physical equilibrium.
605. **Kinetics (5).** Pr., graduate standing.  
Study of the rates of homogeneous, heterogeneous, and catalytic reactions and applications of the rates to the process industries.
609. **Petroleum Refining Engineering (5).** Pr., graduate standing.  
Theoretical and practical aspects, including solvent extraction, catalytic cracking and synthesis of organic compounds from petroleum.
610. **Advanced Physical Metallurgy (5).** Lec. 4, Lab. 3. Pr., CN 426.  
Heat treatment of ferrous and non-ferrous metals including microscopic studies. Recent developments also are included. This course is open by special permission to seniors who have credit for CN 426.
611. **Advanced Kinetics and Principles of Reactor Design (5).** Pr., CN 605.
612. **Process Dynamics and Control (5).** Pr., CN 432 or equivalent. Coreq., MH 361.  
Dynamics of chemical engineering processes and operations, such as reactors, heat exchangers, flow-storage systems, and diffusional operations. This course deals primarily with the mathematical study of automated systems and some of the aspects of computer control.
699. **Research and Thesis.** Credit to be arranged.

#### Chemistry (CH)

*Professors Capps, Kosolapoff, Land, Nichols, Price, Saunders, Schrader, and Stevens*  
*Associate Professors Baker, Barksdale, Bunger, Melius, Peterson, Ward, and Ziegler*  
*Assistant Professors Dinius and Hart*

Credit in CH 103-4-5 toward a degree is subject to completion of the corresponding laboratory course, i.e., 103L, 104L, and 105L. Students not qualified to take CH 103 are required to complete CH 102 before taking CH 103.

102. **Introductory College Chemistry (3).** Coreq., MH 107 or MH 111.  
An introductory course in chemistry.

- 103-4. General Chemistry (4-4). Each quarter. Coreq., for CH 103; MH 160, MH 111 or MH 107 and departmental approval. (CH 103 Pr., for CH 104.)  
A comprehensive course for non-chemistry majors embracing a detailed study of the fundamental principles and concepts of chemistry.
- 103L-104L. General Chemistry Laboratory (1-1). Lab. 3.  
These courses must be taken concurrently with the corresponding lecture course.
105. General Chemistry (3). A continuation of CH 104.  
For non-chemistry majors devoted to a study of the chemistry of the elements according to the analytical groups. Special emphasis will be placed on the principles of ionic equilibria, solubility product, and related phenomena and their use for the separation and identification of the group constituents.
- 105L. General Chemistry Laboratory (2). Lab. 6.  
Laboratory work will cover qualitative analysis. Must be taken concurrently with the corresponding lecture course.
111. General Chemistry (5). Lec. 4, Lab. 3. Coreq., MH 160, MH 111 or MH 107.  
Designed for chemistry majors and others in closely related areas.
112. General Chemistry (5). Lec. 4, Lab. 3. Pr., CH 111 or CH 103.  
Continuation of CH 111.
113. General Chemistry (5). Lec. 3, Lab. 6. Pr., CH 104 or CH 112.  
Continuation of CH 112. Laboratory work covers Qualitative Analysis.
203. Organic Chemistry (5). Pr., CH 104.  
Fundamentals of organic chemistry. Designed for students in Home Economics, and others.
204. Analytical Chemistry (5). Lec. 3, Lab. 6. Pr., CH 113.  
Fundamental concepts used in analytical chemistry and observed in the laboratory via volumetric techniques.
205. Analytical Chemistry (5). Lec. 3, Lab. 6. Pr., CH 204.  
Fundamental concepts used in analytical chemistry and observed in the laboratory via gravimetric analysis and separation techniques.
206. Quantitative Analysis (5). Lec. 3, Lab. 8. Each quarter. Pr., CH 105 and 105L.  
Embraces work in both gravimetric and volumetric analysis, including the analysis of some of the more important ores and minerals.
207. Organic Chemistry (5). Lec. 4, Lab. 3. Each quarter. Pr., CH 104.  
The aliphatic hydrocarbons and their derivatives. This course, together with CH 208, is designed to meet the needs of students in Laboratory Technology, Pre-Medicine, Pre-Dentistry, Pharmacy and other students who are not majoring in chemistry.
208. Organic Chemistry (5). Lec. 3, Lab. 6. Each quarter. Pr., CH 207.  
Continuation of CH 207. The aromatic hydrocarbons and their derivatives are considered in some detail.
301. Biochemistry (5). Lec. 4, Lab. 3. Pr., CH 208.  
Especially designed for students in Pre-medicine and Pharmacy.
- 303-4. Organic Chemistry (5-5). Lec. 3, Lab. 6. Prs., CH 113 for CH 303 and CH 303 for CH 304.  
Organic chemistry covering nomenclature, group reactions, important theories and concepts relating to aliphatic and aromatic compounds, designed primarily for chemistry majors.
305. Organic Chemistry (5). Lec. 3, Lab. 6. Pr., CH 304.  
Continuation and extension of CH 303-304, including heterocyclic compounds and many classes of compounds of interest in the field of biochemistry.
316. Physical Chemistry (5). Pr., MH 112, CH 105 and PS 205.  
A one-quarter course for pre-medicine students.
342. Geology (3). General elective. Pr., CH 104 or sophomore standing.
401. Chemistry for High School Science Teachers (5). Lec. 4, Lab. 3. Summer. Pr., teaching experience.
404. Organic Analysis (Qualitative) (5). Lec. 3, Lab. 6. Pr., CH 305 or equivalent and junior standing.  
After performing identification tests on known compounds, the student identifies pure organic unknowns, and separates and identifies the components of mixtures.  
Students earning graduate credit will identify more unknowns than required of undergraduates.
407. Physical Chemistry (5). Lec. 4, Lab. 3. Pr., MH 264, CH 205 or CH 206, PS 201, and junior standing.  
Embraces a discussion of the more important theories and laws of physical chemistry.
408. Physical Chemistry (5). Lec. 4, Lab. 3. Pr., CH 407, and junior standing.  
Continuation of CH 407.

409. **Physical Chemistry (5).** Lec. 4, Lab. 3. Pr., CH 408, and junior standing.  
Extension of principles studied in CH 407-8 with special reference to electro-chemistry.
410. **Intermediate Inorganic Chemistry I (5).** Lec. 5. Pr., junior standing.  
Atomic structures, valence bonding and periodic properties of the elements.
411. **Intermediate Inorganic Chemistry (5).** Lec. 3, Lab. 6. Pr., CH 410 and junior standing.  
Deals with the synthesis and purification of typical inorganic compounds.
412. **Chemical Thermodynamics (5).** Pr., CH 408, and junior standing.  
Basic laws governing changes in energy in gases, liquids and solids.
413. **Analytical Chemistry (5).** Lec. 3, Lab. 6. Pr., CH 409, and junior standing.  
Fundamental concepts used in instrumental analytical chemistry and as observed in the laboratory via spectrophotometric, electroanalytical and chromatographic techniques.
- 418-19-20. **Biochemistry (5-5-5).** Lec. 4, Lab. 3. Pr., CH 206, CH 208, and junior standing.  
A standard year-course in the principles of biochemistry.

## GRADUATE COURSES

601. **Selected Topics in Chemistry (5).** Lec. 4, Lab. 3. Summer. Pr., CH 401 or its equivalent.  
Modern topics in general chemistry and a short review of organic chemistry.
610. **Advanced Inorganic Chemistry (5).** Spring quarter. Pr., CH 410 or equivalent.  
Selected groups of inorganic compounds considered from a modern physicochemical viewpoint emphasizing their chemical and physical properties, rates of conversion one into another, molecular structure and valence relationships. Considers primarily compounds of the non-metallic elements.
611. **Advanced Inorganic Chemistry (5).** Winter quarter. Pr., CH 410 or equivalent.  
The same type of treatment as given in CH 610, but considering mainly compounds of metallic elements.
612. **Inorganic Preparations (5).** Summer quarter, even years. Pr., CH 610 or CH 611.  
The preparation of typical inorganic compounds illustrating special and more advanced techniques.
614. **The Chemistry of Coordination Compounds (5).** Winter quarter, even years. Pr., CH 410 or equivalent.  
Complex inorganic compounds with emphasis on early and modern developments, isomerism, chelation, methods of determining formation constants and reaction mechanisms.
616. **Inorganic Non-Aqueous Solvent Chemistry (5).** Spring quarter, odd years. Pr., CH 410 or equivalent.  
Physical and chemical characteristics of selected inorganic non-aqueous solvent systems and typical reactions which may be effected in these media.
- 620-21. **Organic Chemistry (5-5).** CH 620 in Fall quarter and CH 621 in Winter quarter. Pr., CH 305 or equivalent.
622. **Quantitative Organic Analysis (5).** Lec. 2, Lab. 6. Spring quarter, even years. Pr., CH 621 or equivalent.  
General methods for the quantitative determination of elements and functional groups in organic compounds.
623. **Heterocyclic Compounds (5).** Summer quarter, even years. Pr., CH 621 or equivalent.  
Organic compounds containing heterocyclic ring systems.
624. **Element-Organic Compounds (5).** Fall quarter, odd years. Pr., CH 621 or equivalent.  
Organic chemistry of Groups III, IV and V elements.
625. **Organic Nitrogen Compounds (5).** Fall quarter, even years. Pr., CH 621 or equivalent.  
Organic compounds containing nitrogen.
626. **Polymers (5).** Spring quarter, odd years. Pr., CH 621 or equivalent.  
Polymeric substances and some of their practical applications.
627. **Special Topics in Organic Chemistry (5).** Summer quarter, odd years. Pr., CH 621 or equivalent.  
A selection of modern topics in organic chemistry.
- 630-31. **Advanced Physical Chemistry (5-5).** Fall quarter for CH 630 and Winter quarter for CH 631. Pr., CH 409 and CH 630. Pr., for CH 631.  
Composed of a series of topics of general and current interest and may vary from year to year. Topics generally considered include kinetic theory of matter, modern theories of



the structure of matter, generalized thermodynamics, relation of molecular structure to spectroscopic and thermodynamic properties, and kinetics of chemical reactions.

632. **Relation Between Structure and Properties of Chemical Substances (5).** Fall quarter, even years. Pr., CH 631.  
Considers the established relationships that exist between structures of organic and inorganic compounds and physical properties which are relatively easy to determine. The principal aim is the demonstration of the fundamental relation of structure of compounds and electronic configurations, consistent with the foundation of modern concepts of the nature of valence.
633. **Chemical Kinetics (5).** Fall quarter, odd years. Pr., CH 631.  
Deals with both theoretical and experimental aspects of reaction rates. The mathematics and characterization of chemically reacting systems include discussions of the collision theory, the transition state theory, unimolecular reactions, reactions in condensed phases, behavior of nonstationary-state systems, and photochemistry.
634. **Heterogeneous Equilibria (5).** Spring quarter, even years. Pr., CH 631.  
A study of chemical and physical equilibria in heterogeneous systems.
635. **Surface Chemistry and Colloids (5).** Spring quarter, odd years. Pr., CH 409.  
A consideration of the properties of surfaces and interfaces and principles relating to disperse systems.
636. **Statistical Thermodynamics (5).** Winter quarter, even years. Pr., CH 631.  
Statistical approach to thermodynamics and chemical equilibrium.
637. **Introduction to Quantum Chemistry (5).** Winter quarter, odd years. Pr., CH 631.  
Quantum theory as applied to chemical problems.
640. **Carbohydrates (5).** Winter quarter, even years. Pr., CH 418 or its equivalent.  
The chemistry of the mono- and polysaccharides.
641. **Amino Acids and Proteins (5).** Fall quarter, odd years. Pr., CH 418 or its equivalent.  
Chemistry of the amino acids and proteins.
642. **Lipids (5).** Summer quarter, even years. Pr., CH 418 or its equivalent.  
Chemistry of the lipids and their biological significance.
643. **Enzymes (5).** Fall quarter, even years. Pr., CH 419 or its equivalent.  
Physical and chemical properties and mechanism of action of enzymes and their role in metabolic reaction.
644. **Intermediate Metabolism (5).** Winter quarter, odd years. Pr., CH 419 or its equivalent.  
Detailed study of the metabolism of the carbohydrates, lipids, and amino acids.
645. **Biochemical Research Techniques (5).** Lec. 2, Lab. 6. Summer quarter, odd years. Pr., CH 420 or its equivalent.  
Laboratory course designed to acquaint the graduate students in chemistry, biochemistry and the biological sciences with the modern techniques used in biochemistry.
650. **Analytical Chemistry (5).** Lec. 2, Lab. 8. Fall quarter. Pr., CH 409.  
Analytical application of physical-chemical measurements concerned primarily with electrical properties.
651. **Analytical Chemistry (5).** Lec. 4, Lab. 3. Spring quarter. Pr., CH 409.  
Analytical application of chemical spectroscopy. Applying techniques of ultra-violet, visible infra-red, etc., and absorption analysis.
652. **Theories and Current Topics of Analytical Chemistry (5).** Winter quarter, odd years. Pr., CH 651.
653. **Physico-chemical Separations (5).** Lec. 4, Lab. 3. Spring quarter, even years. Pr., CH 409.
654. **Radiochemical Analysis (5).** Lec. 3, Lab. 6. Summer quarter, odd years. Pr., CH 205.  
The application of radioactive tracers and related techniques to chemical analysis.
670. **Seminar (1).** (Total credit not to exceed 10 hours.) Each quarter except Summer.  
Required course for all graduate students in chemistry.
699. **Research and Thesis.** Credit to be arranged. May be taken more than one quarter.
799. **Doctoral Research and Dissertation.** Credit to be arranged.

**Civil Engineering (CE)***Head Professor Priest**Professors Hudson and Watwood**Associate Professors Blakney, Metz, Popovics, and Shih**Assistant Professor Peterson*

201. **Surveying I (5).** Lec. 3, Lab. 6. Pr., MH 112 and EG 102 or equivalent.  
Measurement of distances, elevations, and angles; adjustment of instruments; computation of positions, areas, and volumes; contours; grades; mapping, land surveying.
203. **Surveying II (4).** Lec. 3, Lab. 3. Pr., CE 201.  
Route surveying, astronomic observations; photogrammetry.
210. **Engineering Surveying (3).** Lec. 2, Lab. 3. Pr., MH 112.  
Use of chain transit and level; precision and accuracy of measurements; theory of errors.  
For non-Civil Engineering students.
220. **Highway Engineering I (5).** Pr., CE 201.  
Development of highways; geometric design; drainage; earthwork operations; construction materials; concrete and bituminous surfaces.
303. **Structural Materials Testing (3).** Lec. 2, Lab. 3. Pr., ME 306.  
Physical behavior of structural materials. Use of strain gages. Testing of structural members under axial loads and in flexure.
304. **Theory of Structures I (5).** Pr., ME 306.  
Stress analysis of statically determinate structures; influence lines; combined stresses.
305. **Sanitary Engineering I (5).** Lec. 4, Lab. 3. Pr., CE 308.  
Theory and design of water collection and distribution facilities and waste-water collection systems. Laboratory includes fundamental tests relating to both water supply and waste-water treatment. Emphasis placed on theory and significance of the tests.
308. **Hydraulics (5).** ME 307.  
Statics; fundamental equations of motion; ideal fluids; impulse momentum; real fluids; similitude and dimensional analysis; flow in pipes; flow in open channels; measurements; and flow around immersed objects.
314. **Analysis of Aerial Photographs (3).** Lec. 2, Lab. 3. Pr., CH 342.  
A study of soil and rock patterns, characteristics and drainage.
350. **Theory of Structures II (5).** Pr., CE 304, junior standing.  
Moving loads; deflections; stress analysis of statically indeterminate structures including double integration, slope deflection and moment distribution.
400. **Higher Surveying (5).** Lec. 4, Lab. 3. Pr., CE 203, junior standing.  
Photogrammetry; map projections; geodesy; special instruments.
402. **Indeterminate Structures (5).** Pr., CE 401 or ME 403, senior standing.  
Continuation of CE 401; elastic energy; area moments; three-moment equation; secondary stresses.
404. **Reinforced Concrete (5).** Lec. 4, Lab. 3. Pr., CE 401, senior standing.  
Beams and slabs; compression members; forms; building codes.
405. **Sanitary Engineering II (5).** Lec. 4, Lab. 3. Pr., CE 305, junior standing.  
Theory, design, construction, and operation of water treatment and waste-water disposal facilities considered on a unit operations basis.
406. **Hydraulic Laboratory (1).** Lab. 3. Pr., CE 308 or ME 313.  
Venturi Meters; analysis of experimental data; orifices and stork tubes; Pitot tubes; normal loss of energy in pipes; special loss of energy in pipes; uniform flow in open channels; control meters; impulse turbines; drag.
407. **Municipal Engineering I (5).** Pr., senior standing.  
Duties and responsibilities of city engineer and municipal consultant; problems connected with promoting, financing, designing, and constructing municipal improvements.
408. **Engineering Foundations (5).** Pr., CE 404 or BT 413, senior standing.  
Geology as related to design of foundations for engineering structures; design of foundations; use of concrete, steel, wood piling, caissons, cofferdams, grillages, and spread footings, reports on current articles in technical publications.
409. **Public Health Engineering (5).** Pr., senior standing.  
Weather and climate, heating, ventilation, lighting; atmospheric pollution; noise; water and waste disposal, rural sanitation and public health aspects of nuclear energy.
410. **Highway Engineering II (5).** Lec. 4, Lab. 3. Pr., CE 302, junior standing.  
Highway planning, financing, and administration; economics of highway improvement; transportation surveys; maintenance; traffic surveys; procedure of awarding contracts and supervision of construction.

411. **Flow in Open Channels (5).** Lec. 5. Pr., CE 308 or ME 313, junior standing.  
Uniform flow, rapidly varied flow, gradually varied flow, subcritical transitions, surges, supercritical transitions, bends, precipitous slopes, energy dissipation, spillways, and oscillatory waves.
412. **Hydrology (5).** Lec. 5. Pr., CE 308 or ME 313, junior standing.  
Precipitation, runoff, flood routing, flood control, river regulation, and coastal engineering problems.
413. **Hydraulic Structures (5).** Lec. 5. Pr., CE 308 or ME 313, senior standing.  
Dams, spillway, outlet works, gate structures, locks, structures for river regulation, canals, structures for shore protection, port facilities.
414. **Structural Design I (4).** Lec. 3, Lab. 3. Pr., CE 304, junior standing.  
Steel and timber design; flexural members; columns; trusses; connections; structural frameworks.
415. **Construction Planning (5).** Lec. 4, Lab. 3. Pr., junior standing.  
Construction methods; estimates of materials and costs; critical path scheduling; and reports.
416. **Prestressed Concrete Design (5).** Pr., CE 404, senior standing.  
Pretensioning and post-tensioning systems; design of statically determinate and indeterminate prestressed members, flexure, shear, cracking, ultimate capacity, anchorage stresses, raised and stopped cables.
417. **Structural Design II (5).** Lec. 4, Lab. 3. Pr., consent of the instructor and senior standing.  
Arches; continuous structures including bridges, buildings, and special frames.
418. **Soil Mechanics (5).** Lec. 4, Lab. 3. Pr., ME 306, junior standing.  
Engineering properties of soils; soil surveys and sampling; stability; laboratory analysis and tests.
419. **Municipal Engineering II (5).** Pr., senior standing.  
Engineering problems of municipal transportation, communications, water supply, sewerage, streets, schools, shopping, parking, and recreation facilities.
420. **Sanitary Engineering Laboratory (5).** Lec. 4, Lab. 3. Corequisite, CE 405, junior standing.  
Laboratory studies of the physical, chemical, and bacteriological aspects of Sanitary Engineering; laboratory testing procedures and experiments relating to the treatment of waters and wastes; interpretation of routine plant control analyses and indices of pollution.

## GRADUATE COURSES

600. **Bituminous and Concrete Mix Design (5).** Lec. 3, Lab. 6. Pr., CE 403.  
Review of methods of design of bituminous and concrete mixes, with practice in job and laboratory control tests of aggregates and mixes.
601. **Subgrade Stabilization (5).** Lec. 3, Lab. 6. Pr., CE 418.  
Studies of factors involved in stabilization with practice in laboratory and job control tests.
602. **Advanced Soil Mechanics (5).** Lec. 3, Lab. 6. Pr., CE 418.  
Earth pressure theories; stability computations; seepage computations; consolidation; footing, raft, pile and pier foundation; shearing strengths.
610. **Similitude (5).** Lec. 4, Lab. 3. Pr., CE 308 or ME 313.  
Principles of dimensional analysis and similitude, use of models, distorted models, and analogies.
612. **Hydrodynamics (5).** Lec. 5. Pr., CE 308 or ME 313 and MH 361.  
Equations of motion for nonviscous liquids, force potentials, velocity potentials, conformal mapping, circulation, vortices, equations of motion for viscous liquids, boundary layers, drag, turbulence, and wave motion.
613. **Flow of Fluids in Pipes (5).** Pr., CE 308 or ME 313.  
Viscous and turbulent flow of liquids, effects of compressibility, pressure waves, secondary flows, control devices, measuring devices.
620. **Advanced Sanitary Engineering (5).** Pr., consent of instructor.  
An advanced study of the principles utilized in water and sewage treatment processes and public health engineering practice.
621. **Advanced Sanitary Engineering Design (5).** Lec. 3, Lab. 6. Pr., consent of instructor.  
Problems in the layout and design of water, sewage, or industrial waste systems and treatment plants.
622. **Advanced Sanitary Engineering Practice (5).** Lec. 3, Lab. 6. Pr., consent of instructor.  
Advanced laboratory problems and field exercises in the application of sanitary examination of water, milk, food, wastes, and air; stream pollution and industrial waste surveys; protection of water supplies from nuclear and biological warfare agents.

623. **Industrial Waste Treatment (5).** Pr., consent of instructor.  
Industrial waste problems, including characteristics of individual industries, effects on streams, and methods of treatment; also the disposal of nuclear wastes.
630. **Advanced Stress Analysis (5).** Lec. 4, Lab. 3. Pr., consent of instructor.  
Buckling of structures, analysis of elastic and plastic stability, torsion, secondary stresses, arches, theory of limit design.
631. **Special Topics in Structural Design (5).** Lec. 4, Lab. 3. Pr., CE 630.  
Design problems related to continuous frames and trusses; economical proportions, analysis and design of connections.
632. **Experimental Stress Analysis (5).** Lec. 3, Lab. 6. Pr., consent of instructor.  
Basic theory and laboratory techniques for experimental stress analysis; measurement of strain by mechanical and electrical gages, brittle lacquer, and photogrid; two dimensional photoelasticity; membrane analogies; treatment of errors. A term paper is required, except for undergraduate students who may be permitted to enroll in this course.
633. **Elasticity (5).** Pr., consent of instructor.  
Plane stress and plane strain; differential equations of equilibrium; equations of compatibility, two-dimensional problems in rectangular and polar coordinates; strain-energy methods; analysis of stress and strain in three dimensions, torsion of circular and non-circular cross-section; bending of prismatical bars; stress evaluation from strain measurements.
634. **Advanced Reinforced Concrete (5).** Lec. 5. Pr., CE 404.  
Effect of shrinkage, plastic flow and deflection on concrete design. Plastic and ultimate strength theories of design. Fundamentals of prestressed concrete.
690. **Seminar.** Credit to be arranged. May be taken more than one quarter.
699. **Thesis.** Credit to be arranged. May be taken more than one quarter.

### Dairy Science (DH)

*Professors Autrey and Cannon*  
*Associate Professor Rollins*  
*Associate Professor Emeritus Eaton*

200. **Fundamentals of Dairying (5).** Lec. 4, Lab. 3. All quarters. Pr., CH 103. Not open to students who have had DH 201 or DH 301.  
General survey of dairying. Feeding, care and management of dairy cattle. Dairy farm equipment and records. Composition and properties of milk. Handling, testing and processing of milk.
305. **Practical Dairy Tests (5).** Lec. 3, Lab. 4. Fall. Pr., DH 200 or DH 201.  
Routine laboratory practices in testing dairy products and the application of such tests in controlling the composition of dairy products; adapted to dairy inspection work.
308. **Dairy Bacteriology (5).** Lec. 3, Lab. 4. Winter. Pr., DH 200, VM 200, 311, or 330.  
Bacteriology of dairy products; types of organisms encountered and their practical significance; routine bacteriological tests and their application.
310. **Technical Control of Dairy Products (5).** Lec. 3, Lab. 4. Spring. Pr., DH 305 and 308.  
Application of bacteriological and chemical tests to plant operation. Special tests and their application.
- 311-12-13. **Judging Dairy Products (1-1-1).** Lab. 3. Winter, Spring, Fall.  
Flavor and analysis of dairy products. Score cards used in evaluation of flavor characteristics and other factors.
- 314-15-16. **Judging Dairy Cattle (1-1-1).** Lab. 3. Winter, Spring, Fall.  
Studies and practical work in comparative judging of dairy cattle; study of breed score cards; fitting for exhibition.
317. **Dairy Cattle Feeding and Management (5).** Lec. 4, Lab. 3. Fall. Pr., DH 200 or DH 301, AH 204.  
Evaluation of various feeds for growth and milk production; nutritional requirements of dairy animals; application of the principles of nutrition to dairy cattle feeding; calculating rations. Some time devoted to dairy cattle breeding plans, procedures of herd record keeping, management problems.
402. **Artificial Insemination (3).** Lec. 1, Lab. 6. Winter. Pr., DH 200 and junior or senior standing.  
The Artificial Insemination Association; anatomy and physiology of bovine reproduction; practice in collecting, processing and using semen in breeding cows; and study of factors affecting breeding efficiency.

403. Dairy Farm Practices (5). Lec. 3, Lab. 6. Spring. Pr., DH 317 and junior standing.  
Practical study of feed production, storage, and feeding problems; analysis of herd records and pedigrees; study of herd management procedures. In this course emphasis is on situations and records existing on dairy farms.
406. Dairy Cattle Feeding and Management (3). Pr., AH 204 and DH 200 or DH 317, and graduate standing.  
Bases of modern feeding practices; emphasis on reasons for feeding high quality roughage and high energy feeds. Limited study of dairy herd management problems and practices; milk production, testing and recording; appraisal of artificial breeding as a tool in cattle improvement.
- 408-9-10. Dairy Plant Processing (5-5-5). Fall, Winter. Lec. 4, Lab. 3. (Spring. Lec. 2, Lab. 9.) Pr., senior standing.  
Detailed study of fundamental processing operations. Application of these operations in market milk production and in the manufacture of cheese, ice cream, butter and condensed dairy products.
411. Food Plant Sanitation (3). Lec. 2, Lab. 2. Winter. Pr., junior standing.  
Sanitary regulations of food plants. Principles and procedures of cleaning and sanitizing food handling equipment.

## GRADUATE COURSES

601. Milk Secretion (5). Pr., DH 317.  
Anatomy and physiology of milk secretion; milk precursors; factors affecting composition of milk.
602. Advanced Technical Control of Dairy Products (5). Fall. Pr., DH 305.  
Advanced methods of analyses of dairy products and the relation between composition and processing methods.
604. Advanced Market Milk (5). Pr., DH 304.  
Scientific investigations of current problems and their application to the commercial processing and handling of market milk. Special assigned problems.
605. Advanced Ice Cream Making (5). Pr., DH 401.  
Scientific investigations of current problems and their application to the commercial manufacture and handling of ice cream. Special assigned problems.
607. Advanced Dairy Cattle Breeding (5). Pr., DH 402 and DH 403.  
The anatomy and physiology of reproduction in dairy cattle; artificial insemination problems.
608. Special Problems in Dairy Cattle Nutrition (5). Pr., DH 403.  
Critical review of literature on certain dairy cattle nutrition subjects; planning and executing one or more experimental nutrition problems.
609. Experimental Methods in Dairy Research (5). Pr., BY 401.  
Study of technics in designing dairy research projects and in analyzing results.
611. Seminar (1). May be taken for more than one quarter.
699. Research and Thesis. Credit to be arranged.

## Drama (DR)

*Head Professor Peet*  
*Associate Professor Knowles*  
*Assistant Professor Barnes*

- 101-2-3. Introduction to the Arts (1).  
A survey of the arts with emphasis on the interrelation between the various creative areas of Art, Music, Drama, Architecture, etc. from the position of the artist and the observer.
104. Dramatic Production (5). Lec. 2, Lab. 9.  
An apprenticeship in the fundamentals of producing plays from the practical point of view. A general grounding in the field.
105. Acting and Stage Techniques (5). Lec. 2, Lab. 9.  
An introduction to acting and methods of production.
199. Dramatics (1).  
Any student interested in working with the Drama Department's producing organization, the Auburn Players, is eligible. A minimum of thirty hours' work is required. (May be taken for credit for a maximum of six quarter hours.)
201. Directing (5). Lec. 3, Lab. 6.  
An elementary study of the process of directing non-professionals.
202. Acting and Make-Up (5). Lec. 3, Lab. 6.  
The technique and psychology of acting, and elementary stage make-up.

203. **Stage Mechanics (5).** Lec. 3, Lab. 6.  
A study of scene design, materials, construction, and stage lighting.
204. **Dramatic Theory (5).**  
A study of the dramatic theories of the past and present which have influenced the present day theatre.
- 310-11-12. **World Theatre (5-5-5).** Pr., DR 201-2-3-4 or permission of instructor.  
An advanced course dealing with the plays, actors, stages, and audiences, and with the aesthetic and social backgrounds of the theatre from the beginning through the Nineteenth Century.
313. **Drama Appreciation I (3).** General elective. Not open to Drama Majors.  
A survey of the theatre and stagecraft from early times to the present day, emphasizing the social and artistic position of the stage in each civilization.
314. **Drama Appreciation II (3).** General elective. Not open to Drama Majors.  
A survey of contemporary plays and productions, aimed to make theatre-going intelligent fun.
350. **Sound for the Theatre (3).** General elective. Pr., junior standing or approval of instructor.  
The selection, recording, editing and controlling of sound effects as they are needed in the theatre. A non-technical study of the recording process, along with the operation, care and maintenance of tape recording equipment.
- 401-2-3. **Advanced Directing (5-5-5).** Lec. 1, Lab. 12. Pr., junior standing, permission of instructor.  
Productions will be prepared and produced by the student.
- 407-8-9. **Advanced Stagecraft (5-5-5).** Lec. 1, Lab. 12. Pr., junior standing, permission of instructor.  
Productions will be designed, built, lighted and operated by the student.
413. **Twentieth Century Theatre (5).** Pr., junior standing, permission of instructor.  
A study of the present-day theatre.
- 425-26. **Dramatics in the School (5-5).** Pr., senior or graduate standing. (Either part can be taken separately.) To be offered in the Summer quarter only.  
For the teacher who is called upon to select, plan, coach, and produce plays, classroom and assembly programs. The course gives a background of what-to-do and how-to-do-it.

## **Economics (EC), Geography (GY), Secretarial Administration (SA) and Sociology (SY)**

*Head Professor Anson*

*Professors Bonin, Chastain, Hartman, Hartwig, Klontz, Richardson, Ritland*

*Research Professor Steele*

*Associate Professors Boston, J. S. Cook, Gritz, Hill, Kinsey, Lamar,*

*Myles, Patton, Shields, and Stalnaker*

*Assistant Professors Bagwell, Bliss, Dorman, Erwin, D. Evans*

*Frisby, D. P. Hale, F. O. Hale, Waldo, and Williams*

*Instructors Balch, Benton, Boyd, Brown, Clark, C. W. Cook\*, Curtis,*

*Fisher\*, French\*, Haygood, Lard, Stretcher, and Wright*

### **Economics (EC)**

#### **Accounting**

- 211-12. **Introductory Accounting (5-5).** Lec. 3, Lab. 4. Pr., sophomore standing.  
A study of bookkeeping procedure and elementary accounting principles. EC 211 is prerequisite to EC 212.
- 213-14. **Engineering Accounting and Cost Control (5-5).** Lec. 3, Lab. 4. Pr., sophomore standing. EC 213 is prerequisite to EC 214.  
This course is particularly designed for students of engineering. During the first course basic accounting principles and procedures are stressed from an engineering approach. During the second course emphasis is made on cost finding and cost accounting control of industrial concerns.
215. **Fundamentals of General and Cost Accounting (5).** Lec. 3, Lab. 4. Pr., sophomore standing.  
Survey of the fundamental concepts and principles of general and cost accounting with emphasis on accumulating, reporting, and interpreting cost data in the production area of business operations. (Not open to undergraduates majoring in BA. Credit in EC 211 or EC 213 excludes credit in this course.)

\* Temporary.



**311-12. Intermediate Accounting (5-5). Lec. 3, Lab. 4. Pr., EC 212 or 214.**

A study of the advanced principles of accounting involving partnerships, corporations, systems, and analysis of financial statements.

**314. Income Tax Accounting (5). Pr., EC 212 or 214.**

Interpretation of the regulations, preparation of returns, and the keeping of accounting records for tax purposes will be considered in this course.

**411-12. Cost Accounting (5). Lec. 2, Lab. 6. Pr., junior standing and EC 214 or 312.**

A study of accounting principles involved in job-lot, process and standard cost systems.

**414. Advanced Income Tax Accounting (5). Pr., junior standing and EC 312 and EC 314.**

A study of special tax accounting problems of individuals, partnerships, corporations, estates, and trusts. Extensive use will be made of a tax service program.

**416. Auditing (5). Pr., junior standing and EC 312.**

This course is a study of the principles of auditing with particular attention to methods of testing, analyzing, and summarizing accounting records.

**417-18. Advanced Accounting (5-5). Lec. 2, Lab. 6. Pr., junior standing and EC 312.**

Advanced accounting theories and procedures, consolidation of financial statements, and other special problems will be studied in this course.

**419. Governmental Accounting (5). Summer and Winter quarters. Pr., junior standing and EC 312.**

A study of budgeting and accounting procedures of governmental divisions.

**Economic Theory and History****200. General Economics (5). Pr., sophomore standing.**

A survey course in principles and problems of economics dealing with analyses of production costs, determination of prices, and national income composition and distribution. This course not open to majors in Economics and Business Administration. Primarily a service course for students majoring outside the Commerce and Economics fields. Credit may not be earned in both EC 200 and EC 201.

**201-2. Principles and Problems of Economics (5-5). Pr., sophomore standing. (EC 201 is prerequisite to EC 202.)**

An introduction to the principles of economics and analysis of contemporary economic problems and trends. Required of all Economics and Business Administration majors. Credit may not be earned in both EC 200 and EC 201.

**206. Socio-Economic Foundations of Contemporary America (3). General elective.**

An appraisal and survey of the social and economic developments which lead to and help toward an understanding of present day American society. Economic and social institutional development is studied against the background of the Industrial Revolution.

**357. Economic History of Europe (5). Pr., junior standing.**

A survey course dealing with the economic contributions of the medieval period; mercantilism; laissez-faire; and the developments in agriculture, industry, transportation, trade, and banking to World War II.

**358. Economic History of the United States (5). Pr., junior standing.**

The course comprises a study of the development of the economic institutions, growth of industries, regional specialization, and relation of government to business enterprise from the Colonial period to the present.

**451. Intermediate Economics Theory (5). Pr., EC 202, junior standing.**

The theory of pricing under varying market conditions and distribution of income among the factors of production.

**452. Comparative Economic Systems (5). Pr., EC 202, junior standing.**

An analysis of the rival economic doctrines of Capitalism, Socialism, and Communism.

**453. Economics of Growth and Development (5). Pr., EC 202 and junior standing.**

Concepts, principles and problems of economic growth and development with consideration of appropriate policies for both underdeveloped and advanced economies.

**460. Economic Development of the South (5). Pr., junior standing and EC 358 or consent of the instructor.**

In this course the historical approach is used in a study of industries, transportation, banking, etc., in the South. Economic changes are traced and an attempt made to ascertain the fundamental causes that brought them about. Emphasis is given to Alabama's place in the economic picture.

**471. Foreign Trade (5). EC 202, junior standing.**

This course treats the economic background of foreign trade, various products in foreign trade, balance of trade, financing foreign trade, etc.

## Finance

360. **Money and Banking (5).** Pr., EC 202 or AS 202, junior standing.  
The principles of money, credit and banking including consideration of monetary systems, foreign exchange and commercial banking with relation to the Federal Reserve System.
446. **Business Cycles (5).** Pr., EC 202, and junior standing.  
An analysis of the causation of economic cycles, their measurement and proposed means of control.
462. **Monetary Theory and Policy (5).** Pr., junior standing and EC 360.  
An advanced study of monetary and banking policy. Attention given to government fiscal policies and programs.
463. **Corporation Finance (5).** Pr., EC 202 and 212 or 214, junior standing.  
This course covers a practical survey of the financial organization and policies of modern business enterprise with special emphasis on the corporation.
464. **Investments (5).** Pr., EC 463, junior standing.  
This is a study of individual investment policies, investment institutions, and types of investments available.
465. **Public Finance (5).** Pr., EC 202, junior standing.  
A study of the facts and principles of government revenues and disbursements including attention to state and local financial problems.

## General Business

101. **Introduction to Business (5).**  
An introductory course for Business Administration majors covering business organization and procedure. (Not open to juniors or seniors or students with credit in EC 200 or 201.)
321. **Property Insurance (5).** EC 200 or 201 and junior standing.  
The principles, uses and types of insurance with particular emphasis on fire, marine, automobile and casualty lines.
322. **Life Insurance (5).** Pr., EC 200 or 201, junior standing.  
A study of the organization of the life insurance business and the various types of contracts.
323. **Real Estate (5).** Pr., EC 200 or 201, junior standing.  
The fundamental principles and practices as applied to the purchase, sale, lease, mortgage, title and management of real estate.
340. **Personal Finance (3).** General elective. Pr., junior standing.  
An informative study of plans for managing personal financial problems involving insurance, housing, household budgeting, investments, personal and bank loans, credit and time buying, etc.
341. **Business Law (5).** Pr., EC 200 or EC 201, or AS 202.  
This course covers a study of contracts, torts, courts and partnerships from the standpoint of the average citizen. EC 343 excludes credit for this course.
342. **Business Law (5).** Pr., EC 341.  
Here the legal principles covering sales, agency, insurance, personal property, real property, suretyship and bankruptcy are presented from the standpoint of the layman.
343. **The Law and Contracts (3).** Pr., EC 200 or 201, and junior standing. EC 341 excludes credit for this course.  
An introduction to the historical background of law and legal institutions and a study of the law of contracts as it applies in Commerce and Industry.
402. **American Industries (5).** Pr., EC 200 or 201, and junior standing.  
An intensive study of selected industries, emphasizing economic factors affecting growth, organization and operation.
472. **Economics of Transportation (5).** Pr., EC 200 or 201, junior standing.  
This course traces the development of systems of transportation. Rates are studied as they affect agriculture, commerce and industry. Attention is also given to government regulation of transportation agencies.
476. **Motor Transportation (5).** Pr., EC 200 or 201, junior standing.  
A study of the economics of the motor transportation business with emphasis on freight and passenger carriers and the highway system. Particularly designed for students of business and of civil engineering.

## Management

300. **Business Organization & Management (5).** Pr., EC 103 and junior standing.  
A brief description of the structure and major functions of business followed by evaluation of the basic managerial techniques as applied in the operation of business enterprises.

404. **Office Management (5).** Pr., EC 205 or ST 302, or consent of instructor, junior standing.  
Office organization, equipment, layout, planning, personnel supervision, direction of office activities, executive control.
433. **Retail Store Management (5).** Pr., EC 331, junior standing.  
A study of the principles and practices involved in the scientific operation of the retail store. Store location, layout, buying, pricing, and merchandise control are considered among other topics.
437. **Sales Management (5).** Pr., EC 205, EC 331, junior standing.  
A study of the principles and practices of sound organization and administration of a sales organization. Includes consideration of: sales department organization, selecting, training, compensating, and supervising salesmen, sales planning, setting up sales territories and quotas and other problems.
449. **Advanced Personnel Management (5).** Pr., EC 442 or PG 461.  
This course deals with the solution of selected subjects of problems which confront personnel managers and related supervisory personnel. Specialized problems and subjects such as: maintenance of communications, wages and incentives, morale, merit rating, development and training of leaders, counseling, grievance control and recognition of human factors in industry will be considered.
480. **Business Policies and Administration (5).** Pr., EC 202, EC 205, or consent of instructor, junior standing.  
A study of the formulation and application of policies and programs pertaining to personnel, production, finance, procurement and sales in the business enterprise.

### Marketing

331. **Principles of Marketing (5).** Pr., EC 200 or 201.  
A general but critical survey of the field of marketing covering marketing channels, functions, methods and institutions.
332. **Credits and Collections (5).** Pr., EC 200 or 201, junior standing.  
This course is a study of the nature and functions of credit, credit investments, credit information, mercantile and installment credit, credit department, organization and management, collection methods, credit insurance, etc.
333. **Salesmanship (5).** Pr., junior standing.  
A study of the principles and problems in personal selling covering the various steps involved in the selling process. Consideration is also given to the economics of selling and to material useful to salesmen but outside the field of selling techniques.
432. **Advertising (5).** Pr., EC 331, junior standing.  
A study of the principles and practices involved in advertising. Material covered includes the analysis of the need for advertising, preliminary product and market analyses needed for efficient advertising, planning campaigns, media selection, copy, layout and advertising production.
434. **Purchasing (5).** Pr., EC 331, junior standing.  
This course deals with the objectives, the control and the direction of industrial purchasing.
435. **Marketing Problems (5).** Pr., EC 331, junior standing.  
This course deals with marketing problems, policies, costs, channels of distribution, terminal markets, trade barriers and legislation.
436. **Marketing Research Methods (5).** Pr., EC 331, junior standing.  
A study of the methods of scientific research in the field of marketing and their application to the solution of marketing problems. Deals with the planning of an investigation, gathering data, tabulation and analysis, editing, interpretation of data, presentation of reports, determination of market potentials and of various types of quotas.
438. **Retail Merchandising (5).** Pr., junior standing and EC 433.  
Deals with the planning, policies, procedures, and techniques necessary to insure a balanced assortment of merchandise consistent with customer demand and profitable operation. Profit computation, pricing, inventory evaluation, stock planning and stock control are among topics covered.

### Personnel Management and Industrial Relations

350. **Labor Problems (5).** Pr., EC 200 or 201, junior standing.  
This is a survey of the problems of the industrial workers from the standpoint of the worker, the employer, and society.
442. **Personnel Management (5).** Pr., EC 205 or IM 306, junior standing.  
A course dealing with the management of labor, touching upon selection, training, placement, turnover, payment policies, employee representation, etc.
444. **Labor Legislation (5).** Pr., EC 350, junior standing.  
Analysis of background, content, and significance of industrial relations, wage and hour, and selected social security laws.

445. **Industrial Relations (5).** Pr., EC 200 or 201, junior standing.  
An analysis of legislation, collective bargaining, union-management corporation and economic conditions bearing upon employer-employee relations.
447. **Job Evaluation (3).** Pr., EC 442, junior standing or consent of instructor.  
Wage and salary policy and administration with emphasis on the rationalization of wage and salary structures through effective utilization of the techniques of job evaluation and job analysis.
448. **Incentive Methods (3).** Pr., EC 442 and EC 447, junior standing or consent of instructor.  
The methods and associated problems of providing incentives for workers and management personnel in industry and business.

### Statistics

245. **Statistics (5).** Lec. 4, Lab. 2. Pr., EC 200 or 201, sophomore standing.  
A study of the methods of collecting, presenting, and analyzing statistical data; tabular and graphic presentations, frequency distribution, time series and statistical inference.
474. **Advanced Statistics (5).** Pr., junior standing and EC 345 or MH 127 and consent of instructor.  
More advanced methods of statistical analysis including curve fitting; curvilinear, multiple and partial correlation; analysis of variance.

### GRADUATE COURSES (EC)

600. **The National Income and Capital Accumulation (5).** Pr., EC 202 and graduate standing or consent of instructor.  
The course considers the computation of the national income, the uses of income data, interest rates, saving and investment, the monetary and credit system.
601. **Value and Distribution (5).** Pr., EC 202 and graduate standing or consent of instructor.  
This course is an attempt to set forth the positive content and limitations of the modern theories of value, wages, rents, and profits.
606. **Management Problems (5).** Pr., EC 480 or permission of instructor.  
An examination of basic administrative problems in business and industry; attention given to managerial controls as applied to administrative and operative functions.
607. **Managerial Economics (5).** Pr., EC 202.  
The course presents an analysis of decision theory and of criteria for decision-making concerning output, pricing, capital budgeting, scale of operations, investment and inventory control. Attention is also given to concepts of profits, production and cost functions, competition and equilibrium for the firm and the industry. A brief introduction to linear programming is included.
608. **Business Research (5).** Pr., EC 202.  
The theory and practice of research through the mail survey, the personal interview, study of documents and observation. The analysis and presentation of research findings will be stressed.
610. **Managerial Accounting (5).** Pr., EC 212.  
A course, primarily non-technical, designed for the student who will be confronted with business problems requiring a comprehensive understanding of accounting concepts, and the accepted methods of applying these concepts in decision-making, planning, and control.
611. **Advanced Accounting Theory (5).** Pr., EC 312 and graduate standing or consent of instructor.  
A review of the origin and development of double-entry accounting; followed by a critical study of the theory of modern accounting principles and procedures.
614. **Accounting Systems (5).**
616. **Advanced Auditing (5).** Pr., EC 416 and graduate standing or consent of instructor.  
This course will cover the application of auditing principles and procedures to practical problems encountered in the field of public and private accounting.
617. **Advanced Accounting Problems (5).** Pr., EC 417 and graduate standing or consent of instructor.  
This course is an extension to and a consolidation of all the other advanced accounting courses. Attention will be given to preparation for special accounting examination.
621. **Personnel and Labor Policy (5).**  
Seminar analysis and discussion of selected personnel or labor problems, programs and cases.
650. **Economic Seminar (1-10).** Pr., graduate standing or consent of instructor.  
A course designed for those students engaged in intensive study and analysis of economic problems.

665. **Seminar in Public Finance (5).** Pr., EC 202 and graduate standing or consent of instructor.  
Theory and principles of public finance at an advanced level with special emphasis on fiscal policy.
674. **Advanced Statistical Analysis (5).** Pr., EC 474.  
Further study of analysis of variance; analysis of covariance; introduction to econometrics.
699. **Research and Thesis.** Credit to be arranged. May be taken more than one quarter.

### Geography (GY)

For listing of courses, see page 267.

### Secretarial Administration (SA)

For listing of courses, see page 315.

### Sociology (SY)

For listing of courses, see page 316.

### Elementary Education (EED)

*Head Professor Coss*

*Associate Professor Ellisor*

*Assistant Professors Cadenhead\*, Newell, Roughton, and Spencer*

*Instructor English\**

#### Orientation

101. **Orientation: Personal and Professional (3).**  
Designed to help transfers from other curricula and students enrolled in other schools achieve optimum personal, social, and intellectual development as college students and to assist them in understanding teaching as a profession. (Credit in EED 101 excludes credit in EED 102-3-4.)
- 102-3-4. **Orientation: Personal and Professional (1-1-1).**  
Designed to help freshmen achieve optimum personal, social, and intellectual development as college students and to assist in planning professional careers. (Credit in EED 102-3-4 excludes credit in EED 101.)

#### Reading Improvement

Available as a service course and as a general elective to all University students.

310. **Reading Improvement (3).** Lec. 2, Lab. 2. General elective. (Not open to students with credit in PG 101.)  
Developmental reading for students who wish to improve their reading skills. Each student's present degree of reading efficiency is diagnosed and a program structured to his individual needs is planned and conducted.

### Curriculum and Teaching

#### Undergraduate

329. **Creative and Recreational Expression (6).** Lec. 5, Lab. 3. Pr., FED 300 or consent of department chairman.  
Creative and recreational expression, involving basic knowledge and understanding, laboratory demonstrations, and experimental approaches useful in this development, including such areas as music, art, rhythms, and other play activities, creative dramatics, creative writing, and use of learning materials.
370. **Teaching Basic Skills (6).** Lec. 5, Lab. 3. Pr., FED 300 or consent of department chairman.  
The teaching of language, number, and related skills, emphasizing knowledge and understanding, use of appropriate instructional materials, laboratory demonstrations, and experimental approaches basic to the development of these skills.
371. **Fundamentals of Reading (4).** Pr., junior standing.  
The teaching of reading with appropriate attention to books and materials.
396. **Music for the Elementary Teacher (3).** Pr., MU 371 or consent of department chairman.  
Elective course for Elementary Education Majors who need additional instruction in music.

\* Temporary.

- 421. Developing Understandings of the Natural and Social Environment (6).** Lec. 5, Lab. 3. Pr., FED 300 or consent of the department chairman.

The development of social understandings and relationships through study of the natural and social environment. Attention is given to such areas as social science, natural and physical science, health and safety through use of appropriate children's books and other instructional materials, laboratory demonstrations and experimental approaches.

Undergraduate students in elementary education are eligible to complete requirements for teaching in certain areas in both the elementary and secondary schools. Students with this interest will complete one course in Teaching and one course in Program and a subject-matter concentration of 27 to 30 quarter hours in the subject-matter field selected. Teaching fields for the twelve-grade program include health, physical education and recreation, page 267; industrial arts, page 321; and the areas listed under Interdepartmental, page 280. (For description of student teaching requirements, see page 280.) Available courses for meeting the subject-matter concentration are listed under minor requirements for each field included in the twelve-grade program.

- 425. Student Teaching in Elementary School (10-15).** Pr., senior standing. (For description, see page 280.)

### Advanced Undergraduate and Graduate

- 461. Current Theory and Practice in the Teaching of Reading (5).** Pr., junior standing and teaching experience or consent of instructor.

Principles of reading instruction within the settings of the areas of child development, learning theories, individual differences, the role of reading in the total school and community environment, and examination of current reading materials.

- 474. Problems in Improvement of Reading at the Elementary School Level (5).** Pr., junior standing and teaching experience or consent of instructor.

An examination of problem areas of effective reading instruction in grades one through nine. Emphasis on phonetic word attack skills, comprehension, vocabulary building, and the use of supplementary materials in the reading program.

- 496. Music in the Elementary School (5).** Pr., junior standing.

To give the individual teacher a deeper insight into skills, techniques, and knowledge of music. Appropriate materials, adapted to social and musical interests of children, are studied and evaluated.

- 497. Organization of Elementary School Music (3).** Pr., junior standing and EED 329 or IED 423.

Theory and development of the music program in the elementary school.

### Graduate

- 646. Studies in Education (1-3).** Pr., one quarter of graduate study.

A problem using research techniques. The problem will be selected in consultation with the professor who will supervise it. A problem should be selected which will contribute to the program of the student. (Credit in ED 651 prior to 1960 excludes credit in this course.)

- 649. Educational Trends and the Basic Skills (5).**

A critical study and evaluation of recent developments in the elementary and junior high school with implications for teaching the basic skills.

The two courses which follow constitute an area of concentration in the field of reading. EED 461 is a prerequisite for EED 642 which is designed for remedial teachers, supervisory personnel and those wishing specialized training in the field of reading. EED 656 will be restricted to persons interested in developing an area of specialization appropriate for diagnostic, consultative, or supervisory services.

- 642. Remedial Procedures in Reading (5).** Pr., EED 461 or EED 371.

To produce skilled workers in the remedial aspects of reading. Emphasis will be placed on the diagnosis of reading disabilities and appropriate individual and group techniques for correcting deficiencies discovered.

- 656. Directed Individual Study in Reading Diagnosis and Reading Remediation (5-10).** Pr., EED 642 or consent of departmental chairman.

Clinical experiences in diagnosing problems in reading and related areas. Also clinical experiences in the remediation of reading problems.

### Curriculum and Teaching in the Respective Areas of the Elementary School Program

Each of these courses 651, 652, 653, and 654 applies to the following areas of the elementary school program: (G) Language Arts, (H) Mathematics, (K) Science, and (L) Social Science.



651. **Research Studies in Education in Areas of Specialization (5).** Pr., 18 hours of appropriate subject matter and 36 hours of psychology and professional education.  
Review, analysis, and interpretation of available research with emphasis on designing new research to meet the changing needs of the school.
652. **Curriculum and Teaching in Areas of Specialization (5).** Pr., 18 hours of appropriate subject matter and 36 hours of psychology and professional education.  
A critical study of teaching practices and reappraisal of selecting experiences and content for curriculum improvement.
653. **Organization of Program in Areas of Specialization (2-5).** Pr., 18 hours of appropriate subject matter and 36 hours of psychology and professional education.  
Advanced study of program, organization, and development of basic and supplementary materials for guiding teachers, faculties, and school systems in the continuous improvement of curriculum and teaching practices.
654. **Evaluation of Program in Areas of Specialization (2-5).** Pr., 18 hours of appropriate subject matter and 36 hours of psychology and professional education.  
Evaluation and investigation of teaching effectiveness with attention also given to the utilization of human and material resources and the coordination of areas of specialization with the total school program and with other educational programs of the community.

Study in other teaching areas including art; dramatic arts; gifted; mental retardation; music; speech; speech correction; health, physical education and recreation; and industrial arts is available also to students in elementary education.

- 659-660. **Practicum in Areas of Specialization (5-5).** Pr., Master's Degree or equivalent, and permission of major professor.  
Provides advanced graduate students with supervised experience with emphasis on the application of concepts, principles, and skills acquired in previous course work.

For advanced courses in curriculum, school library science, higher education, and research and dissertation, see IED.

### Thesis

699. **Thesis Research.** (Credit to be arranged.) May be taken more than one quarter.

## Electrical Engineering (EE)

*Head Professor Weaver*

*Professors Carlovitz, Honnell, Russell, Spann, and Summer*

*Associate Professors Chadwick, Graf, Holmes, Lowry, Nichols, and Sprague*

*Assistant Professors Feaster, Miller, and Slagh*

*Instructors Barnes, Littleton, McDaniel, McKay, and Rogers*

263. **Circuit Analysis I (5).** Lec. 4, Lab. 3. Pr., PS 203 and MH 361.  
Basic definitions; laws; theorems; techniques.
304. **Electric Circuits (4).** Pr., MH 252 or 263 and PS 203 or 206.  
Passive and active circuits. Not open to electrical engineering students.
305. **Electronics and Instrumentation (5).** Lec. 4, Lab. 3. Pr., EE 304.  
Instrumentation systems; communications systems. Emphasis on application. Not open to electrical engineering students.
306. **Machinery and Power Transmission (5).** Lec. 4, Lab. 3. Pr., EE 304.  
Electrical machinery; power transmission. Emphasis on application. Not open to electrical engineering students.
361. **Circuit Analysis II (5).** Lec. 4, Lab. 3. Pr., EE 263.  
Sinusoidal steady-state analysis, including magnetically coupled circuits; Fourier analysis.
362. **Circuit Analysis III (5).** Lec. 4, Lab. 3. Pr., EE 361.  
Transients.
363. **Distributed Systems (5).** Lec. 4, Lab. 3. Pr., EE 362.  
Transmission lines; other distributed parameter systems.
372. **Electronics and Communications I (4).** Lec. 3, Lab. 3. Pr., EE 361.  
Semiconductors; gas and vacuum devices; active circuits.
373. **Electronics and Communications II (5).** Lec. 4, Lab. 3. Pr., EE 372, EE 362.  
Amplifiers; oscillators; modulation; feedback; information theory.
383. **Energy Conversion and Transmission I (4).** Lec. 3, Lab. 3. Pr., EE 361.  
Electrical energy transmission; electromechanical energy conversion.
442. **Closed-Loop Systems (4).** Lec. 3, Lab. 3. Pr., EE 383, EE 471 and junior standing.  
Transfer functions; root locus plots; Nyquist and Bode diagrams; compensation.

443. Solid State Electronics (3). Lec. 2, Lab. 3. Pr., EE 471, EE 491 and junior standing.  
Applied solid state physics; selected topics in advanced solid-state devices and circuits.
444. Digital Computers (3). Lec. 3. Pr., EE 471 and junior standing.  
Logic circuits; system analysis; applications of Boolean Algebra.
445. Nuclear Instrumentation (3). Lec. 3. Pr., EE 471 and junior standing.  
Electronic systems and devices utilized in nuclear science and technology.
446. Analog Computers (3). Lec. 2, Lab. 3. Pr., EE 471 and junior standing.  
Computer programming including time and amplitude scaling. Computer solution of linear, non-linear, and partial differential equations. Simulation of various types of physical systems.
447. Magnetic Devices (3). Pr., EE 481 and junior standing.  
Magnetic amplifiers and related magnetic devices employing both extrinsic and intrinsic feedback.
461. Introductory Network Synthesis (3). Pr., EE 362 and junior standing.  
Introduction to the synthesis of passive networks, with emphasis on driving point functions.
471. Electronics and Communications III (5). Lec. 4, Lab. 3. Pr., EE 373.  
Continuation of EE 373.
472. Communication Systems (3). Pr., EE 471 and junior standing.  
Theoretical topics in modern communications systems.
481. Energy Conversion and Transmission II (5). Lec. 4, Lab. 3. Pr., EE 383.  
Electromechanical and electromagnetic energy conversion.
482. Energy Conversion and Transmission III (5). Lec. 4, Lab. 3. Pr., EE 481.  
Continuation of EE 481; other processes for conversion of electrical energy.
483. Energy Conversion and Transmission Systems (3). Pr., EE 482 and junior standing.  
Theoretical topics in modern energy conversion systems.
484. Electronic Instrumentation for Graduate Students (4). Lec. 3, Lab. 3. Pr., PS 203, MH 361, 8 hours of Electrical Engineering and junior standing.  
Fundamentals of electronic instrumentation; special topics. Not open to electrical engineering students.
490. Seminar. Credit to be arranged. May be taken more than one quarter.
491. Electromagnetic Fields I (5). Lec. 4, Lab. 3. Pr., EE 363.  
Differential and integral equations of the electromagnetic field; boundary conditions; solution of elementary boundary value problems.
492. Electromagnetic Fields II (5). Lec. 4, Lab. 3. Pr., EE 491.  
Theory and application of guided waves; theoretical and experimental study of microwave devices and systems; relationship between field theory and circuit theory.
493. Electromagnetic Fields III (5). Lec. 4, Lab. 3. Pr., EE 492 and junior standing.  
Radiating systems; wave propagation in unbounded media; applications to space communications; illustrative experiments.

#### GRADUATE COURSES

610. Power Transmission Systems (5). Pr., EE 614.  
Power transmission systems operating under both normal and fault conditions; problems of design, protection, relaying, and metering; various types of instabilities; the utilization of network analysers of various types.
611. High Voltage Phenomena (5). Pr., EE 614.  
Study of high voltage phenomena such as lighting and corona discharge; analysis and design of associated equipment such as surge generators and protective devices; contemporary problems of high voltage power transmission, grounding, and insulation.
612. Advanced Electrical Machine Design (5). Pr., EE 614.  
The methods of Kron, Parks, and Fortescue applied to both steady state and transient conditions; space harmonics and hunting; emphasis on equipment currently in use by power transmission systems and industrial plants.
613. Transmission Lines (5). Pr., EE 614.  
Unified study of all types of wire transmission lines; special cases including taper, non-uniform insulation and unbalance to ground; general theory and utilization of charts; stubbing; per-unit techniques.
614. Transients in Linear Systems (5).  
Transients in lumped and distributed parameter systems by classical and transform techniques. Associated material in differential equations, complex variables, and dynamics.
615. Advanced Electrical Measurements (5). Lec. 4, Lab. 3. Pr., EE 614.  
Measurements of circuit parameters, current, voltage, power, frequency, and wave shape at all frequencies; capabilities and limitations of contemporary measuring equipment.

- 617. Principles of Pulse Circuits (5).** Lec. 4, Lab. 3. Pr., EE 614.  
Analysis and design of basic types of pulse forming circuits, with applications to pulse systems and laboratory work suited to the individual student's needs.
- 618. Advanced Closed-Loop Control Systems (5).** Lec. 4, Lab. 3. Pr., EE 614, EE 442.  
Correlation of frequency and transient response; regulation of lumped and distributed parameter systems; modulated carrier systems; sampled-data systems and  $z$  transforms; off-on systems by phase plane and method of Kochenburger; topics associated with contemporary publications.
- 620. Network Synthesis (5).** Pr., EE 614.  
Synthesis of passive two-terminal and four-terminal networks; energy relations; fundamental properties of driving-point immittances; electro-potential analogy; conventional and insertion loss method of design.
- 621. Electronic Computer Theory (5).** Lec. 4, Lab. 3. Pr., EE 614.  
General study of computer components; operational amplifiers, function generators, multipliers, stabilized power supplies; pulse circuits, memory storage devices and read-outs devices; techniques of computer operation.
- 630. Advanced Applications of Electromagnetic Theory I (5).** Pr., EE 493.  
Detailed analysis of guided waves using advanced mathematical techniques; methods illustrated by application to structures of practical interest.
- 631. Advanced Applications of Electromagnetic Theory II (5).** Pr., EE 630.  
Continuation of EE 630.
- 632. Quantum Electronics (5).** Pr., PS 618.  
The role of quantum theory in electronics and communications; interaction of electromagnetic radiation and discrete energy level systems; microwave solid-state masers; optical masers.
- 633. Nonlinear Analysis (5).** Pr., EE 614.  
Detailed study of systems of nonlinear differential equations with illustrative examples drawn from models representing technological devices based on nonlinear effects.
- 634. Parametric Electronics (5).** Pr., EE 633.  
Theory of parametric systems; analysis of noise.
- 635. Theory and Applications of Magnetic Semiconductors (5).** Pr., PS 618.  
Types of magnetism; interaction of electromagnetic radiation and magnetic moment in solids having strong exchange coupling; applications to communications and electronics.
- 636. Nonlinear Control Systems (5).** Pr., EE 618.  
The analysis and synthesis of nonlinear closed-loop control systems; Lyapunov's methods; other stability criteria; numerical methods.
- 637. Plasma Dynamics (5).** Pr., PS 606.  
A study of the dynamic properties of systems of charged particles, with emphasis on systems constrained by steady or time-varying magnetic fields. Areas emphasized are basic theory, laboratory models, and instrumentation.
- 638. Information Theory (5).** Pr., EE 614.  
Quantitative study of information transfer in discrete and continuous channels; the effect of noise on communication channels; the use of efficient coding to increase transmission reliability.
- 639. Switching Circuits (5).** Pr., EE 614.  
Application of Boolean Algebra to the design of switching circuits; illustrations drawn from circuits used in the logical design of digital computers.
- 680. Directed Reading in Electrical Engineering.** Credit to be arranged.
- 690. Seminar.** Credit to be arranged. May be taken more than one quarter.
- 699. Research and Thesis.** Credit to be arranged. May be taken more than one quarter.
- 799. Research and Dissertation.** Credit to be arranged. May be taken more than one quarter.

## Engineering Graphics (EG)

*Head Professor Francis*

*Associate Professors Collins, Ingram, Little, McClung*

*Assistant Professor Klepinger*

*Instructors Johnson, Taylor, Wilhelm, and Zurfleih*

- 102. Engineering Drawing I (2).** Lab. 6. Pr., Plain Geometry.  
Use of instruments; lettering practice; geometric constructions; principle views in projection; auxiliary and section views; dimensioning; detail working drawings; and isometric projection.

104. **Descriptive Geometry (2).** Lab. 6. Pr., EG 102 and Solid Geometry.  
Basic principles pertaining to points, lines, and planes; including problems on sections, developments, and intersections of solids.
105. **Engineering Drawing II (2).** Lab. 6. Pr., EG 102.  
Technical sketching; reading analysis of shop drawings; machine parts, detail and assembly drawings; types and arrangement of materials; titles and symbols; tracings, printing, and other reproduction methods; steel and timber structures; riveting and welding.
204. **Kinematics of Machines (3).** Lec. 2, Lab. 3. Pr., EG 104, EG 105, and coreq., PS 201.  
A study and graphical analysis of the fundamental elements of machines, including: definitions, velocity and acceleration diagrams, methods of transmission of motion by links, cams, gears, gear trains, and flexible connectors.
205. **Applied Graphic Statics (2).** Lec. 1, Lab. 3. Pr., EG 105 and coreq., PS 201.  
Resultants and equilibrium of concurrent, parallel and non-parallel forces; moments of parallel forces; general cases of reaction of coplanar forces; stresses in simple trusses by joint and section methods; cranes, derricks, dredges, and frames with bending members; static forces in machines with and without friction.
206. **Technical Sketching (2).** Lab. 6. Pr., EG 104 and EG 105.  
Technical lettering, block and architectural; types of illustrations, purpose and use; sketching techniques; pictorial drawings, oblique, isometric, dimetric, trimetric; perspective; shading; use of the airbrush; charts; reproductions of drawings.
306. **Advanced Graphics for Engineers (3).** Lec. 2, Lab. 3. Pr., EG 104, MH 361.  
Vector geometry, functional scales, nomography, combination of observations, empirical equations, and graphical calculus.

## GRADUATE COURSES

612. **Design of Jigs and Fixtures (5).** Lec. 3, Lab. 6. Spring.  
Study of accepted types of jigs, fixtures and dies; production rates, expense and savings, automatic tooling design, indexing operations.
620. **Patents (5).** Winter.  
Patentability, claims, patent office procedures, foreign patents, role of patent attorney, patent drawings, sale and exploitation of patents.

## English (EH)

Head Professor Patrick

Professors Benson, Current-Garcia, L. Gosser, Haines, Hoepfner, McCann, and Moore

Associate Professors R. E. Amacher, Burnett, Jones, Littleton, and Woodall

Assistant Professors Anne W. Amacher\*, Butler, Durant, Faulk, Hudson, Jackson,

McLeod, Melzer\*, Polhemus, Rose, Stroud, and Zivkovic

Instructors Cole, Gladys Gosser\*, Johnson, Jeanette Jones\*, Lawson, Mitchell\*,

Patterson, Saunders, Scott, Sewell, Olivia Solomon, and Weissinger\*

The requirements for the English major enrolled in the School of Science and Literature are stated on page 195, and for the English major enrolled in the School of Education, on page 153.

English Composition (101-102 or 103-104) is required of all students and is a prerequisite for all other courses in English.

010. **Remedial English (5 hrs. lec.—non-credit).**

A remedial course in the fundamentals of grammar and composition.

- 101-2. **English Composition (5-5).** EH 101 pr. for EH 102. All quarters.

A course in the essentials of grammar, composition, and reading.

- 103-4. **English Composition for Superior Students (5-5).** All quarters.

Reading and composition for superior students.

108. **Classical Literature (5).** All quarters.

The reading and discussion of significant works of classical Greek and Roman literature with emphasis on the western heritage of ancient thought.

141. **Medical Vocabulary (5).** All quarters.

A course dealing with prefixes, suffixes, and the more common root words of medical terminology.

208. **Literature of the Western World (3).** General elective. Pr., EH 108 or EH 253. All quarters.

The study of about eight significant literary works of the Western World which provide representative views of man in the Medieval, Renaissance-Reformation, and Eighteenth Century periods.

\* Temporary.

- 241. Scientific Terminology (5). Spring**  
A study of word parts in the terminologies used in the medical, natural, and physical sciences. As far as is practicable, each student's work is channelled in the direction of his special needs.
- 253. Literature in English (5). All quarters.**  
A study of the literature of England from 1400 to 1800.
- 254. Literature in English (5). All quarters. Pr., EH 253.**  
A study of English and American literature of the nineteenth and twentieth centuries.
- 301. Creative Writing (3). General elective. Fall, Spring.**  
A course devoted principally to the writing and criticizing of short stories. But the student may be permitted to write poetry, drama, or any other form of imaginative literature.
- 302. Creative Writing (3). General elective. Fall, Spring.**  
A continuation of English 301.
- 304. Technical Writing (3). All quarters.**  
Not open to students with credit in EH 345. Report writing for engineers.
- 310. Word Study (3). General elective. Fall, Spring.**  
A study of the history of English words and their meanings with the object of improving the student's command of his language and illustrating for him some of the patterns in the development of human thought.
- 312. The European Novel (5). Spring.**  
The reading and analysis of significant novels by major European writers.
- 320. An Introduction to Drama (3). General elective. Winter.**  
Representative tragedies and comedies of Europe from antiquity to the present. Such figures as Sophocles, Moliere, Shakespeare and Ibsen will be considered.
- 325. The Short Story (5). Winter.**  
The development of the short story in America and Europe from the early nineteenth century to the present.
- 330. Medieval Literature in Translation (5). Spring.**  
The study of masterworks of English and European literature produced from 1250 to 1400.
- 340. The Classical Background (5). Winter. Not open to students with credit in EH 108.**  
Readings from the major Greek and Roman writers. The texts studied are chosen with particular attention to their subsequent influence upon English and American literature.
- 345. Business and Professional Writing (5). All quarters.**  
A course in practical composition including abstracting, correspondence, and reports for students in business administration and pre-professional science.  
NOT OPEN TO ENGLISH MAJORS OR MINORS. Students cannot earn credit in this course and also in EH 304.
- 350. Shakespeare's Greatest Plays (3). General elective. Fall. Not open to students with credit in EH 451-2.**  
A study of some of Shakespeare's masterpieces.
- 352. Contemporary Fiction (5). Fall.**  
American and British novelists from Lawrence to Faulkner.
- 353. Contemporary Drama (5). Spring.**  
Continental, British, and American dramatics from Ibsen to the present day.
- 357. Survey of American Literature (5). Fall.**  
American literature from the beginning to 1860.
- 358. Survey of American Literature (5). Spring.**  
American literature from 1860 to the present.
- 360. Continental Fiction (3). General elective. Winter.**  
A study of representative European short stories and novels.
- 361. History of English Drama (5). Winter.**  
English drama from the medieval period to 1900.
- 363. Eighteenth Century English Literature (5). Fall.**  
A survey of poetry and prose from Dryden through Shenstone.
- 365. Southern Literature (3). General Elective. Spring.**
- 372. The American Novel (5). Fall.**  
The development of the American novel from the beginning to 1900.
- 381. The Literature of the Age of Reason (3). General elective. Fall.**  
A study of rationalism, its assumptions and effects, political, social, and scientific as seen in the works of such major eighteenth-century writers as Locke, Johnson, Burke, Voltaire, and Rousseau.

385. **Literature in the Scientific Age (3). General elective. Winter.**  
An investigation of a few major 19th and 20th century writers who reflect in their works the impact of scientific theory and methodology upon traditional, cultural, and philosophical values.
390. **Advanced Composition (5). All quarters.**  
The practice and theory of expository writing; the command of language for the clear and forceful communication of ideas.
401. **Advanced English Grammar (5). Fall, Spring. Pr., junior standing.**  
A study of both formal and functional grammar.
410. **European Literature (5). Fall. Pr., junior standing.**  
A survey of the principal European literary figures and trends from the Renaissance to the present, with emphasis on the literature of Italy, France and Germany.
441. **History of the English Language (5). Winter.**  
A study of the chronological development of the English language.
450. **Contemporary Poetry (5). Winter. Pr., junior standing.**  
The chief modern poets of England and America.
- 451-2. **Shakespeare (5-5). Winter, Spring. Pr., junior standing.**  
The first quarter deals with the plays written before 1600, emphasizing comedies; the second, with the plays written after 1600, stressing tragedies.  
Credit for either or both of these courses excludes credit for EH 350.
456. **The English Romantic Movement (5). Spring. Pr., junior standing.**  
A survey of Romantic poetry from Gray to Keats.
457. **Victorian Literature (5). Spring. Pr., junior standing.**  
The major poets and non-fiction writers from 1830 to 1890.
459. **Poetry and Prose of the Elizabethan Period (5). Fall. Pr., junior standing.**  
A survey of the non-dramatic literature of the Elizabethan Period.
463. **Eighteenth Century English Literature (5). Spring. Pr., junior standing.**  
A survey of poetry and prose from Johnson through Blake.
- 481-2. **English Novel (5-5). Fall, Winter. Pr., junior standing.**  
The first quarter provides a survey of the development of fiction from the Greek Romances down through the Renaissance and then concentrates on the great English novelists of the 18th Century. The second quarter provides a survey of the English novel from Jane Austin to Thomas Hardy.
491. **American Poetry (5). Fall, alternate years. Pr., junior standing.**  
A study of the major American poets from the Colonial period to 1920.
492. **American Drama (5). Fall, alternate years. Pr., junior standing.**  
A survey of American dramatic and stage history from Colonial times to the nineteenth century, with emphasis on developing tastes and techniques.
495. **Southern Literature (5). Winter. Pr., junior standing.**  
A study of the poetry, fiction, and non-fiction prose writings in the South from Revolutionary times to the present, with major emphasis centering on Southern regional attitudes and trends. Not open to students with credit in EH 365.
- 498-99. **Readings for Honors (5-5). Pr., junior standing with a minimum 2.0 overall grade average and a 2.5 average in English courses; and consent of the English Department.**  
Individual reading programs in a specific period or phase of literature or language, as determined by the instructor and student. An honors essay and a written examination will be required.

## GRADUATE COURSES

610. **Introduction to Graduate Study (5). Fall, Winter.**
- 611-12. **Studies in the History and Interpretation of Literature (5-5). Summers only.**
- 616-17. **Studies in the American Language (5-5). Summers only.**
620. **The English Language, I: Old English (5). Fall.**
621. **The English Language, II: Middle and Modern English to 1500 (5). Winter. Pr., EH 620.**
622. **Linguistics (5). Summer 1964.**
623. **Beowulf (5). Spring 1965. Pr., EH 620.**
625. **Medieval Literature (5). Winter 1966.**
626. **Chaucer (5). Winter.**
631. **Elizabethan and Jacobean Drama (5). Winter 1965.**



- 632. Spenser (5). Spring 1966.
- 633. Studies in the Poetry and Prose of the English Renaissance (5). Spring 1965.
- 634. Poetry and Prose of the Seventeenth Century (5). Fall 1964.
- 635. Studies in Shakespeare (5). Spring 1965.
- 636. Milton (5). Winter 1965.
- 640. Restoration and Eighteenth Century English Drama (5). Fall 1964.
- 641. Studies in the Age of Pope (5). Winter 1965.
- 642. Studies in the Age of Johnson (5). Winter 1966.
- 650. Studies in English Romanticism (5). Winter 1965.
- 652. Victorian Poetry (5). Spring 1965.
- 653. Victorian Prose (5). Fall 1964.
- 654. Studies in the Nineteenth Century English Novel (5). Spring 1965.
- 660. Modern Poetry (5). Winter 1965.
- 661. Modern Fiction (5). Summer 1965.
- 662. Studies in Twentieth Century Literature (5). Fall 1964.
- 670. American Literature of the Colonial and Revolutionary Periods (5). Spring 1966.
- 671. Studies in American Literature, 1800-1860 (5). Winter 1966.
- 672. Studies in American Literature, 1860-1914 (5). Fall 1964.
- 673. Studies in the Literature of the South (5). Spring 1965.
- 680. The History of Literary Criticism (5). Winter 1966.
- 681. The History of Literary Criticism (5). Spring 1965. Continuation of EH 680.
- 683. Studies in European Literature (5). Spring 1966. Pr., consent of instructor.
- 684-85. Directed Individual Study (5-5).
- 699. Research and Thesis (5).
- 799. Research and Dissertation (5).

### Foundations of Education (FED)

*Acting Head Professor Stalcup*

*Professors Hollaway and Punks*

*Assistant Professors Millican, Phillips, Rosen, and Young*

#### Undergraduate

- 200. Foundations of Education (4). Lec. 3, Lab. 2. All quarters. Pr., PG 213 or equivalent; Pr., or coreq., PG 214 or equivalent.  
The social, philosophical and historical foundations upon which education is based. Designed to provide the student with an overview of the educational enterprise and a basis for depth study of the areas covered. Laboratory experiences\* involving observations and participation in actual work of an elementary or secondary school are provided.
- 300. Principles and Practices in Education (4). Lec. 3, Lab. 2. All quarters. Pr., FED 200 or equivalent, PG 213 and 214 or equivalent, admission to teacher education.  
Purposes of public education in a democracy. Study of curriculum, organization and administration of public education, school personnel, school finance and the school plant. The relation of theory to practice. Lectures, discussion techniques, demonstrations and laboratory experiences\* in the public schools.
- 490. Evaluation in Education (3). Lec. 2, Lab. 2. All quarters. Pr., senior standing.  
Analysis of methods, procedures, and evaluative instruments for determining teaching effectiveness and the attainment of educational goals. Examination of theories and methods of testing, measurement, self-evaluation, and pupil accounting. Techniques, uses and interpretation of educational statistics. Laboratory experiences\* in the public schools.

#### Advanced Undergraduate and Graduate

- 420. Educational Sociology (5). Pr., PG 214 or equivalent, FED 200 or equivalent, junior standing.  
Analysis of the school as a social institution. Group interaction, formal and informal structure and organization, and the relationship of education to other social institutions.

\* See page 151 for complete description.

## Graduate

- 600. Education in Modern Society (5).** Pr., graduate standing. (Not open to students with credit in ED 635.)  
Analysis and interpretation of the interaction of historical, philosophical and sociological considerations affecting education in modern society.
- 601. Social Foundations of Education (5).** Pr., FED 600. (Not open to students with credit in AD 601.)  
Man as a social being, an analysis of his relationships, his social inventions, including community organization and structure, mores, value patterns, decision making and their significance for education.
- 634. History of Education (5).** Pr., FED 600.  
The emergence of education as a formal institution, tracing its historical development from early Greek times to the present and emphasizing the historical antecedents which have helped to shape the role and functions of education in Western culture.
- 636. Philosophy of Education in America (5).** Pr., FED 600.  
Major American contributions to the philosophy of education and their influence on educational practice. Need for, and procedures in, reexamining concepts in the light of recent scientific and cultural developments.
- 637. Development and Status of Educational Philosophy (5).** Pr., FED 600; FED 636 or consent of department chairman.  
Development of philosophy of education from the standpoint of its implications for educational practice. Several patterns of thought are considered including supernaturalism, idealism, realism, humanism, communism, existentialism, and experimentalism.
- 639. Comparative Education (5).** Pr., FED 600; two quarters of graduate study or consent of department chairman.  
Comparison among the educational systems of leading foreign countries and the United States, giving attention to the historic origins of different systems and to their present sociological and philosophical significance.
- 645. Current Problems in Education (5).** Pr., teaching experience.  
Interpretation of current issues concerning education. Problems of administration, supervision, curriculum and their relationship to the total educational program are studied.
- 646. Studies in Education (1-3).** Pr., one quarter of graduate study.  
Study of a problem using research techniques, to be selected in consultation with the supervising professor. A problem should be selected which will contribute to the program of the student. (Credit in ED 651 prior to 1960 excludes credit in this course.)
- 647. Foundations in Curriculum and Teaching (5).**  
Development of curriculum patterns and teaching materials reviewed in terms of recent investigations and experimentation; conflicting conceptions of the nature of the curriculum and the sociological, philosophical and psychological implications of these conflicts; methods of curricular reorganization in the elementary and secondary schools.
- 661. Research and Experimentation in Education (5).**  
Need for the continuous improvement of education through sound solutions to educational problems. The scientific method and its significance for improving education. Methodology in educational research and experimentation.
- 672. Statistical Methods in Education (5).**  
The need and importance of applying statistical methods to the study of educational problems, statistical methods appropriate to education, and interpretation of meanings of statistical analyses.
- 673. Research and Experimental Design (5).** Pr., FED 672.  
Relationship of design to validity; significance of variables, testing hypotheses, evaluation of research and research findings.

## Foreign Languages (FL)

Head Professor Skelton

Assistant Professors Helmke, Ikenberry, Warbington

Instructors Davis\*, Henkin, Hoffman, and Sanders

Students who have completed two or more years of foreign language in high school should continue that language on the intermediate level. College credit is not granted for an elementary course when the student has pursued that language two years in high school.

\* Temporary.

## French

## 121. Elementary French I (5).

To give the student the fundamentals of the French language together with as much simple reading as time will permit. Constant stress will be placed on oral and aural practice, with special emphasis on idiomatic expression.

## 122. Elementary French II (5). Pr., FL 121 or equivalent.

A continuation of FL 121.

## 221. Intermediate French I (5). Pr., FL 122 or equivalent.

Designed to acquaint the student with the background and the civilization of France and at the same time provide practice in reading current French. Special emphasis is placed on the acquisition of vocabulary and on oral practice.

## 222. Intermediate French II (5). Pr., FL 221 or equivalent.

An introduction to French literature. Representative works of moderate difficulty and high literary value will be read. Oral practice will be continued.

## 321. Advanced French I (5). Pr., FL 222 or equivalent.

Outstanding prose works, especially short stories and novels. Continued emphasis on vocabulary building and oral practice.

## 322. Advanced French II (5). Pr., FL 222 or equivalent.

A continuation of FL 321, with a review of French grammar and practice in composition.

## 421. Contemporary French Literature (5). Pr., FL 222 or equivalent.

Selected readings in the literature of the nineteenth and twentieth centuries. Advanced practice in conversation.

## 422. Contemporary French Literature (5). Pr., FL 222 or equivalent.

A continuation of FL 421.

## 423. Survey of French Literature (5). Pr., FL 222 or equivalent.

A study of the development of French literature from the *Chansons de geste* through the classical period.

## 424. Survey of French Literature (5). Pr., FL 222 or equivalent.

A continuation of FL 423. The development of French literature from Romanticism to the modern period.

## Spanish

## 131. Elementary Spanish I (5).

An introduction to the structure of the Spanish language, with practice in speaking, understanding, reading, and writing.

## 132. Elementary Spanish II (5). Pr., FL 131 or equivalent.

A continuation of FL 131.

## 231. Intermediate Spanish I (5). Pr., 132 or equivalent.

Designed to acquaint the student with the civilization of Spain while providing practice in reading and speaking.

## 232. Intermediate Spanish II (5). Pr., 231 or equivalent.

An introduction to Spanish literature. Representative works of outstanding Spanish writers will be examined.

## 331. Advanced Spanish I (5). Pr., FL 232 or equivalent.

Recognized works of Spanish and Spanish-American writers with a review of Spanish grammar and practice in composition.

## 332. Advanced Spanish II (5). Pr., FL 232 or equivalent.

A continuation of FL 331. Continued emphasis on vocabulary building and oral practice.

## 431. Contemporary Spanish Literature I (5). Pr., FL 232 or equivalent.

Selected readings in the literature of the nineteenth and twentieth centuries. Advanced practice in conversation.

## 432. Contemporary Spanish Literature II (5). Pr., FL 232 or equivalent.

Selected readings in Spanish-American literature of the nineteenth and twentieth centuries. Advanced practice in conversation.

## 433. Survey of Spanish Literature (5). Pr., FL 232 or equivalent.

A study of the development of Spanish literature from *Poema del mio Cid* through the Golden Age.

## 434. Survey of Spanish Literature (5). Pr., FL 232 or equivalent.

A continuation of FL 433. The development of Spanish Literature from the *Decadencia* to the contemporary period.

## German

## 151. Elementary German I (5).

An introduction to the structure of the German language, with practice in speaking, understanding, reading, and writing.

152. **Elementary German II (5).** Pr., FL 151 or equivalent.  
A continuation of FL 151.
251. **Intermediate German I (5).** Pr., FL 152 or equivalent.  
Designed to provide the student with an understanding of the civilization of Germany while providing practice in reading and speaking the language.
252. **Intermediate German II (5).** Pr., FL 251 or equivalent.  
An introduction to German literature. Representative works of various German authors will be studied.
351. **Advanced German I (5).** Pr., FL 252 or equivalent.  
Recognized works of German writers, with a review of German grammar and practice in composition.
352. **Advanced German II (5).** Pr., FL 252 or equivalent.  
A continuation of FL 351. Continued emphasis on vocabulary building and oral practice.
451. **Contemporary German Literature I (5).** Pr., FL 252 or equivalent.  
Selected readings in German literature of the nineteenth and twentieth centuries. Advanced practice in conversation.
452. **Contemporary German Literature II (5).** Pr., FL 252 or equivalent.  
A continuation of 451.
453. **Survey of German Literature (5).** Pr., FL 252 or equivalent.  
The development of German literature from the beginnings through the Age of German Classicism (Schiller and Goethe).
454. **Survey of German Literature (5).** Pr., FL 252 or equivalent.  
A continuation of FL 453. The development of German literature from the Age of Romanticism up to the present.

### Italian

241. **Elementary Italian I (5).** Pr., permission of the instructor.  
An introduction to the structure of the Italian language, with practice in speaking, understanding, reading, and writing.
242. **Elementary Italian II (5).** Pr., FL 241 or equivalent.  
A continuation of FL 241.
341. **Intermediate Italian I (5).** Pr., FL 242 or equivalent.  
An introduction to the civilization and the literature of Italy while providing practice in reading and speaking Italian.

### Portuguese

261. **Elementary Portuguese I (5).** Pr., permission of the instructor.  
An introduction to the structure of the Brazilian language, with practice in speaking, understanding, reading, and writing.
262. **Elementary Portuguese II (5).** Pr., FL 261 or equivalent.  
A continuation of FL 261.
361. **Intermediate Portuguese I (5).** Pr., FL 262 or equivalent.  
An introduction to Brazilian civilization and Luso-Brazilian literature.

### Russian

171. **Elementary Russian I (5).**  
An introduction to the Russian language, with practice in reading, understanding, speaking, and writing.
172. **Elementary Russian II (5).** Pr., FL 171 or equivalent.  
A continuation of FL 171.
271. **Intermediate Russian I (5).** Pr., FL 172 or equivalent.  
An introduction to Russian civilization. Emphasis on acquisition of vocabulary and practice in reading.

### Forestry (FY)\*

*Professors DeVal, Christen, Hodgkins, and Richards*  
*Associate Professors Johnson and Posey*  
*Assistant Professors Beals, DeBrunner, Larsen, and Steensen*

101. **Introduction to Forestry (3).** Fall, Winter.  
An orientation course for freshmen students covering all subject matter fields in professional forestry as well as curriculum requirements and related academic relationships.

\* The prerequisites may be waived, by permission of the instructor concerned, for junior and senior students in other departments.

104. **Forest Cartography (2).** Lab. 6.  
Introduction in the use of drafting instruments, engineering lettering, conventional map signs and symbols and application to planimetric and topographic maps, map design and grids.
105. **Forestry Convocation (0).** Fall, Winter, Spring.  
A semi-quarterly forum required of all forestry students except in summer quarters. Visiting lecturers from all segments of federal, state, and private forestry will discuss topics of importance to the forest economy and interest to students.
- 201-2. **Dendrology (3-3).** Lec. 1, Lab. 6. Fall, Winter. Pr., BY 102, or permission of instructor.  
Identification, taxonomic and ecological characteristics, and the distribution of important forest trees of the U.S.A. One quarter devoted to Angiosperms and one quarter to Gymnosperms.
203. **Silvics (5).** Lec. 3, Lab. 6. Spring. Pr., AY 305, BY 306, FY 202.  
Influence of site factors on the reproduction, growth, development, and characteristics of forest vegetation and the effect of forest cover on the site. The classification of forest vegetation.
204. **Forest Mensuration (5).** Lec. 3, Lab. 6. Spring. Pr., FY 202, CE 201.  
Methods and equipment used in measuring and computing the size, growth, and volume of trees and stands; units and volume of products; the preparation and use of volume and yield tables; principles of sampling as applied to timber estimates.
205. **Wood Identification and Uses (5).** Lec. 3, Lab. 6. Spring. Pr., FY 201 or FY 202.  
Identification of the commercial woods of the United States by macroscopic features. Elementary wood anatomy, sufficient to permit an understanding of wood properties and why individual woods are suited to some uses and not to others. Introduction of the student to the major uses of wood. The basic principles of lumber grading.
206. **Wood Measurements (3).** Lec. 2, Lab. 3. Winter. Pr., MH 112.  
Wood measurements oriented toward the needs of students in wood technology. Basic units of measure, log rules and their bases, and log scaling.
301. **Silviculture (5).** Lec. 3, Lab. 6. Fall. Pr., FY 101, FY 392.  
Methods of cutting for reproduction and stand improvement. Methods of slash disposal; silvicultural plans.
302. **Forest Fire Control (3).** Lec. 2, Lab. 3. Winter. Pr., FY 101 and junior standing.  
Forest fire protection, including organization, administration of the program, and detection and suppression of fires. Transportation, communications, and the operation, repair and maintenance of forest fire equipment. Public relations problems.
309. **Sampling (3).** Lec. 2, Lab. 3. Winter. Pr., MH 112 or consent of instructor.  
Basic theory of sampling from finite and infinite populations. Probabilistic concepts, including confidence limits and estimation of optimum, proportional, and equal sample sizes. Concepts of random, systematic, multistage, double, and other sampling designs and of stratification will be delineated.
310. **Advanced Mensuration (3).** Lec. 2, Lab. 3. Spring. Pr., FY 309, FY 390.  
Forest growth and yield. Preparation and interpretation of stand, stock, and yield tables. Stand projection methods. Growth per cent.
311. **Wood Technology I (5).** Lec. 3, Lab. 6. Fall. Pr., FY 101 and one quarter of Dendrology.  
Identification of commercial woods of industry by microscopic features. Basic micro-technique. Wood anatomy and properties.
313. **Farm Forestry (5).** Lec. 3, Lab. 4. Fall, Winter. Pr., sophomore standing.  
(Not open to students in the degree Forestry curricula.) The place of farm forests in agricultural economy. The application of forestry principles to the problems of the farm woodland, especially as they relate to Alabama conditions.
315. **Seeding and Planting (3).** Lec. 2, Lab. 3. Spring. Pr., FY 101. Coreq., FY 301.  
Theory and practice of seed collection, germination, seeding, and planting of forest trees in the nursery and in the field.
316. **Forest Economics (3).** Lec. 3. Winter. Pr., FY 101, AS 202, junior standing.  
Fundamentals of economics as applied to the business of forestry. Supply, demand and price relationships and predictions for the future. Input-output relationship in production.
390. **Field Mensuration (5).** Lec. 1, Lab. 12. Summer. Pr., FY 101, FY 204.  
Practical experience in timber cruising and field application of forest mensuration principles.
391. **Forest Engineering (5).** Lec. 1, Lab. 12. Summer. Pr., FY 101, CE 201.  
Surveying and mapping forest properties.
392. **Forest Ecology (3).** Lec. 1, Lab. 6. Summer. Pr., FY 101, FY 203.  
Field study of the biotic and edaphic factors that affect the growth and development of forest stands. A study of natural plant succession in the Piedmont of Alabama.

393. **Alabama Forest Industries (3).** Lec. 1, Lab. 6. Summer. Pr., FY 101.  
Inspection and study of logging operations and primary manufacturing of forest products.
396. **Forest Site Evaluation (2).** Lec. 1, Lab. 3. Summer. Pr., FY 101, FY 203.  
Field training in quantitative evaluation of the productivity of forest sites on the basis of soil properties.
402. **Range and Game Management (5).** Lec. 5. Spring. Pr., FY 392.  
Principles of range and game management as applied to forest properties.
405. **Lumber Grading (3).** Lec. 2, Lab. 3. Fall.  
Theory and practice of lumber grading, including hardwoods and softwoods; yard, structural and factory grades.
407. **Forest Management (5).** Lec. 5. Winter. Pr., FY 301, FY 316 and junior standing.  
Organization and administration of forest properties; theory of working plans; regulation of cuts; cutting cycles and rotations.
408. **Logging (3).** Lec. 2, Lab. 3. Fall. Pr., FY 101. Coreq., FY 301.  
Logging methods and the factors affecting the costs in each phase of logging. Field practice given in the safe use of mechanical logging equipment.
413. **Microtechnique of Hard Materials (5).** Lec. 1, Lab. 12. Fall. Pr., FY 311, or permission of instructor and junior standing.  
Preparation and sectioning of hard materials for microscopic study. Care and use of the sliding microtome and diamond saw, staining, counterstaining, and mounting of sections.
414. **Regional Silviculture (3).** Lec. 3. Fall. Pr., FY 301 and junior standing.  
Value, growth, stands, species, and problems of forestry in the South, especially Alabama, as compared to other states and regions.
417. **Photogrammetry (5).** Lec. 3, Lab. 6. Fall, Winter. Pr., FY 309, FY 390 and junior standing.  
Use of aerial photographs in Forestry. Particular emphasis is placed on specifications for forestry photographs, basic map control, planimetric mapping, form-line mapping, timber type mapping and timber volume estimation.
418. **Advanced Forest Management (3).** Lec. 1, Lab. 6. Spring. Pr., FY 407 and junior standing.  
Review of steps and procedures in preparation of management plans; preparation of management plans for selected areas.
421. **Forest Research Methods (3).** Lec. 2, Lab. 3. Spring. Pr., FY 309 and junior standing.  
Review of statistical and sampling methods. Experimental design and analysis of data.
425. **Wood Gluing and Lamination (5).** Lec. 3, Lab. 6. Winter. Coreq., FY 311, Pr., PS 205 and junior standing.  
Types and characteristics of woodworking glues. The theory, design, and manufacture of laminates and other glued products. The student will be introduced to research techniques and procedures by pursuing a specific study that will culminate in a comprehensive report.
427. **Forest Valuation (5).** Lec. 5. Fall. Pr., FY 204, FY 316 and junior standing.  
Bases and methods of determining the value of stumpage and land. Calculation of taxes on and damages to a forest enterprise. Principles of insurance as applied to a forest enterprise. Computation of financial maturity of trees and stands.
429. **Forest Tree Nursery Management (3).** Lec. 2, Lab. 3. Spring. Pr., FY 315 and junior standing.  
Principles and practices applicable to the operation of a commercial forest tree nursery. Soil Management techniques directly related to seedling quality will be stressed.
430. **Wood Technology II (5).** Lec. 3, Lab. 6. Fall. Pr., FY 311, CH 203, PS 205, and junior standing.  
Physical and chemical nature of wood substances; wood-liquid relations, thermal and electrical properties, chemical processing of wood.
431. **Wood Technology III (5).** Lec. 3, Lab. 6. Spring. Pr., FY 311, PS 205, and junior standing.  
Mechanical properties of wood, factors affecting the strength of wood, principles used in design of wood structures.
432. **Seasoning and Preservation of Wood (5).** Lec. 5. Winter. Pr., FY 311 and junior standing.  
Principles and practices of seasoning and impregnation of wood, study of wood destroying agencies.
433. **Seasoning and Preservation Laboratory (2).** Lab. 6. Spring. Pr., FY 432 and junior standing.  
Required for wood technology majors only. Laboratory study of techniques and equipment used in the seasoning and impregnation of wood.



- 434. Forest Policy (3).** Lec. 3. Fall. Pr., FY 101 and junior standing.  
Development of forest policy in the United States against the background of cultural heritages and national economic situations as causative factors. Some time is devoted to several basic considerations important in developing forest policy.
- 435. Forest Products Merchandising (5).** Lec. 3, Lab. 6. Winter. Pr., FY 101, FY 204, junior standing.  
Introduction of both round and sawn products on the forest products market serves as a basis for the course. Special emphasis is placed on relationships between stumpage value, production costs, and selling price of each product. Problems designed to demonstrate the effect of integrated merchandising of forest products are supplemented with sawmill demonstrations and field discussions.
- 436. Forest Watershed Management (5).** Lec. 4, Lab. 3. Pr., FY 203 or BY 413 and junior standing.  
Influence of forests and forestry practices upon streamflow.
- 440. Farm Forest Management I (3).** Lec.-Dem. 4. Pr., graduate standing.  
Field demonstrations to be arranged. Methods of measuring forest products and computing volumes and growth of trees and stands applicable to forest practice on farm woodlots. Methods of thinning, stand improvement, and harvesting, applicable to woodlot management.
- 450. Small Woodland Management (5).** Summer. For majors in Education or Agricultural Education, by consent of instructor.  
The importance of small forest holdings in the national, regional, and state economies. An evaluation of trends in ownership patterns and their related problems. Characteristics used in recognition of forest stands comprising major forest types. Principles of forest management and their application.
- 490. Seminar in Forestry (1).** Spring. Pr., senior standing.  
Advanced study of current literature and recent developments, with written and verbal reports on selected problems. Required of all graduate students in forest management and wood technology and all seniors in the Honors Program.

## GRADUATE COURSES

- 601. Wood Chemistry (5).** Lec. 2, Lab. 9. Spring. Pr., FY 430, CH 203.  
Detailed study of the physical and chemical nature of cellulose and modified cellulose and their derivatives. Study of the lignocellulose complex. The chemical analysis of wood.
- 610. Forest Tree Improvement (5).** Lec. 4, Lab. 3. Spring. Pr., ZY 300 or consent of instructor.  
Principles of heredity as applied to forest trees and their management. Review of current knowledge in tree improvement. Principles of forest tree breeding. Study and evaluation of activities designed to produce genetically improved trees.
- 611. Forest Soils (5).** Lec. 3, Lab. 6. Fall. Pr., AY 304 or AY 305.  
Importance of morphological, physical and chemical properties of forest soils in relation to growth of trees. Classification of forest soils on the basis of productivity. Special emphasis on forest soils in the southern pine region.
- 617. Forest Inventory (5).** Lec. 4, Lab. 3. Winter. Pr., FY 417, FY 309.  
Design and analysis of large scale timber volume and growth appraisals, continuous forest inventory and use of electronic computing equipment in forest inventory operations.
- 640. Farm Forest Management II (3).** Lec. 4. Pr., FY 440 and graduate standing.  
Organization of the farm woodlot for continuous forest production. Methods of balancing out and drain, and plans for the efficient administration of the woodlot as a business.
- 691. Directed Study (1-5).** All quarters. Directed Study limited to a maximum of 5 hours in any specified area and to a maximum of 15 hours in all areas as credit towards the Master of Science degree.  
Areas of Directed Study: (A) Forest Management, (B) Forest Economics, (C) Forest Sampling, (D) Regression Analysis, (E) Linear Programming, (F) Forest Photogrammetry, (G) Forest Mensuration, (H) Forest Engineering, (I) Forest Soils, (J) Forest Ecology, (K) Forest Genetics, (L) Tree Physiology, (M) Wood Anatomy & Quality, (N) Uses of Wood & Derived Products, (O) Chemistry of Wood Glues, Finishes, & Impregnants, and (P) Timber Physics.
- 695. Special Problems (3 to 8 hrs.).** All quarters.  
Study of a special problem in forestry or wood utilization. Such a problem will be of lesser magnitude than a thesis but will test the student's ability to do thorough library research as well as any needed laboratory or field work, and to prepare a comprehensive report on his findings. The work may be spread over more than one quarter, but shall be limited to a total of eight quarter hours.
- 699. Research and Thesis.** Credit to be arranged.

**Geography (GY)***Professor Richardson**Assistant Professors Bagwell and Dorman*

102. **Principles of Geography (5).** Not open to juniors or seniors.  
Basic course in geography. Man and his works in relation to the Earth as a planet, location, climate, land forms, water bodies, minerals, soils, biota.
103. **Economic Geography (5).** Not open to juniors or seniors.  
An elementary, systematic study of distribution and environmental relations of man's principal economic works. Designed primarily for business administration students.
301. **Geo-Political Basis of World Powers (3).** General elective. Pr., junior standing.  
Deals with the interaction between the natural-physical environment and the international activities of world powers. Emphasis is placed upon the changing geographic and economic patterns in world affairs.
303. **Geography of the Soviet Union (3).** General elective. Pr., junior standing.  
The physical and human geography of the U.S.S.R. and its role in international affairs.
304. **Geography of South America (5).** Pr., junior standing.  
A regional survey of economic and social developments, resources and products.
305. **Geography of North America (5).** Pr., junior standing.  
Human-use regions, resources, social and economic developments will be studied.
306. **Geography of Europe (5).** Pr., junior standing.  
An analysis of the influences of climate, surface features, and natural resources on the distribution of peoples, their industries and routes of trade. Consideration will be given to each country within its regional setting and to the relationship of Europe to the remainder of the world.
307. **Geography of Asia (5).** Pr., junior standing.  
A survey of climate, topography, and natural resources and their influence upon the distribution of peoples, their industries and commerce.
308. **Geography of Africa (5).** Pr., junior standing.  
A study of the principal regions of Africa with particular emphasis on the areas and countries of greater economic and international importance.
404. **Physical Geography of the World (5).** Pr., senior standing.  
Selected elements of physical geography. Soil, water, minerals, flora and fauna will be studied.
405. **Cultural Geography of the World (5).** Pr., senior or graduate standing.  
A study of the influence of physiographic factors in the social, economic and political development of peoples and states.
407. **World Resources and Their Utilization (5).** Pr., junior standing.  
The world's principal natural resources are studied primarily from the geographic point of view (location, transportation, topography, water supply, power sources, climate, etc.). Covers the principles of resource appraisal, the changing nature of resource utilization, and resource conservation.
650. **Geography Seminar (5).** Pr., graduate standing or consent of instructor.  
Designed for students engaged in intensive study and analysis of problems in geography.

**Health, Physical Education and Recreation (PE)***Head Professor Fourier**Professors Land, Lapp, and Umbach**Associate Professors Evans, Fitzpatrick, and Young**Assistant Professors Dragoin, Lawler, Martincic, Rosen, Turner, and Walton**Instructors Bengtson, Jackson, Lurie, Lynn, Nash\*, Price\*, Rawls, Reid\*,**Ronald\*, Tomlin, Waldrop, and Washington**Visiting Professor Francis*

The instructional program of the Department of Health, Physical Education, and Recreation comprises (1) courses in physical education for all students, (2) courses for the major and minor in health and physical education, and (3) professional courses for students in preparation for teaching.

In satisfying the six-quarter requirement in Physical Education, unless deferment is recommended by the student's Dean, all undergraduate students under 26 years of age must register for physical education in the first and succeeding quarters of residence until this requirement has been met. Any deficiencies in physical education incurred at Auburn University and/or elsewhere before the student reaches age 26

\* Temporary.

must be cleared prior to graduation. Only one credit per quarter is permitted or transferable to meet the six-quarter requirement.

**Course Requirements (Men).** First quarter freshmen with "A" classification are required to take PE 100. Students placed in the "B" health classification may be required to take PE 100, depending upon their physical disability.

In order to receive a well-rounded program of activities, students are required to pass one course in each of the areas listed below. Successful completion of intermediate swimming is required of all men students. However, if a student must take two swimming courses to meet the aquatic requirement, he may omit one course in any area except Fundamentals.

**Area Requirements (Men).**—Fundamentals, Team Sports or Rhythms, Individual Sports, Combative Sports, Aquatics\*, and Gymnastics.

**Varsity Sports (Men).**—A student who has received credit for varsity athletics may not repeat the same area in physical education activities.

**Course Requirements (Women).**—Swimming\*\*

**Hygiene (Women).**—Three hours required of all freshman women. Hygiene 110 may be taken for 3 credits in lieu of Hygiene courses 111, 112, and 113.

**Credit.**—All courses carry one quarter hour credit per quarter (maximum of six quarter hours allowed on degree). No duplication of courses is permitted except in varsity sports, or for students who have health classifications of "C".

Course No.	
<b>Fundamentals</b>	
100	Basic Physical Education
<b>Adaptive</b>	
105	Sports Education
<b>Aquatics</b>	
120	Beginning Swimming
220	Intermediate Swimming
222	Synchronized Swimming
320	Life Saving and Water Safety
<b>Combative Sports</b>	
130	Boxing
131	Fencing
132	Wrestling
332	Varsity Wrestling
<b>Gymnastics</b>	
140	Apparatus
141	Trampoline
142-143	Tumbling
<b>Rhythms</b>	
170-171	Folk Dance
172-173	Contemporary Dance
174-175	Tap Dance
176-177	Social Dance
178	Ballet

Course No.	
<b>Individual Sports</b>	
150	Angling
151-152	Archery
153-154	Badminton
155-156	Bowling
157-158	Golf
159	Mass Games & Relays
160-161	Recreational Sports
162	*Rifle Marksmanship
163-164	Tennis
165	Track
166	Weight Training
168	Basic Equestrian
337	Varsity Golf
363	Varsity Tennis
365	Varsity Track
366	Varsity Cross Country

Team Sports	
180-181	Basketball
182-183	Soccer
184-185	Softball
186	Speedball
187	Touch Football
188-189	Volleyball
380	Varsity Basketball
384	Varsity Baseball
387	Varsity Football

### 110. Hygiene (3).

Problems in personal, mental and environmental hygiene.

### 111-112-113. Hygiene (1-1-1).

PE 111 deals with problems in personal hygiene; PE 112, mental hygiene, suggesting certain principles for working out individual difficulties; and PE 113, environmental hygiene; a consideration of the sociological environment and public health education.

### Courses for the Major and the Minor

#### 106. Developmental Activities: Theory and Techniques (2). Lec. 1, Lab. 4.

Body mechanics, calisthenics, movement fundamentals, weight training.

#### 133. Combatives: Theory and Techniques (2). Lec. 1, Lab. 4.

Boxing, fencing, and wrestling.

#### 167. Individual and Dual Sports: Theory and Techniques (2). Lec. 1, Lab. 4.

Archery, badminton, bowling, golf, and tennis.

\* Open to students in Air, Army and Navy ROTC.

\*\* Students currently certified as Water Safety Instructors by the American Red Cross are exempt from this requirement.

190. **Apparatus and Tumbling: Theory and Techniques (2).** Lec. 1, Lab. 4.  
Apparatus, stunts, tumbling, pyramids, and trampoline.
191. **Team Sports: Theory and Techniques (2).** Lec. 1, Lab. 4.  
Basketball, field hockey, soccer, softball, speedball, and volleyball.
201. **Introduction to Physical Education (5).** Lec. 5. Fall, Winter, Spring.  
An introduction to the field of physical education from the earliest periods to the present. Emphasis is placed on the physical, biological and psychological principles of physical education.
202. **Basketball (Men) (3).** Lec. 2, Lab. 2. Fall.  
The fundamental skill techniques of basketball—offense, defense, and strategy.
206. **Football (Men) (3).** Lec. 2, Lab. 2. Winter.  
The fundamentals of football and the different types of offense, defense, team strategy and generalship.
212. **Elementary School Activities (3).** Lec. 2, Lab. 2.  
A survey of physical education activities suitable for use in the first six grades including teaching devices.
214. **Kinesiology (5).** Lec. 5. Pr., VM 220-221, PS 204.
221. **Aquatics: Theory and Techniques (2).** Lec. 1, Lab. 4.  
Water sports, scuba diving, operation and maintenance of pools.
278. **Social and Folk Dance: Theory and Techniques (2).** Lec. 1, Lab. 4.  
Basic skills, fundamental knowledge and appreciation of social and folk dance.
280. **Basketball Officiating (1).** Lab. 3.  
Discussions, practices, and leadership experiences.
284. **Softball Officiating (1).** Lab. 3.  
Discussions, practices, and leadership experiences.
288. **Volleyball Officiating (1).** Lab. 3.  
Discussions, practices, and leadership experiences.
301. **Recreation Leadership (5).** Lec. 5. Winter, Summer.
303. **Baseball (3).** Lec. 2, Lab. 2.  
Offensive and defensive strategy, pitching, catching, infielding, outfielding, batting and baserunning.
304. **Track and Field (3).** Lec. 2, Lab. 2.  
Fundamental skills and techniques of track and field athletics. The organizing and conducting of track meets.
311. **Conduct of Dance for High School and Recreation Programs (3).** Lec. 2, Lab. 3. Pr., completion of PE 278 or equivalent.  
Providing experiences in analyzing, selecting and presenting dance for high school and recreation programs.
312. **Theory and Conduct of Team Sports for Women (3).** Lec. 2, Lab. 3.  
A study of lead-up games, skill techniques, rules, and skill tests; practice and application of the skills and principles of team sports.
313. **Theory and Conduct of Individual and Dual Sports (3).** Lec. 2, Lab. 3.  
Skills, and techniques, rules, and skill tests; practice and application of the skills and principles of individual and dual sports.
314. **Theory and Conduct of Gymnastics (3).** Lec. 2, Lab. 3.  
Skills and techniques for teaching apparatus, stunts, and tumbling.
316. **Tests and Measurements (3).**  
Analysis, administration, and interpretation of tests and measurements in health, physical education and recreation.
317. **School Health and Health Education (5).** Lec. 5.  
Basic scientific health knowledge and its application to the school program. Includes principles, materials, and techniques of health education in elementary and secondary schools.
318. **Principles of Recreation (5).** Lec. 5.  
The significance and meaning of leisure; theories of play; the recreation movement in the United States. Principles of program planning and development at state and local levels of government, in schools and in industry.
319. **Outdoor Recreation (5).** Lec. 5.  
Outdoor recreation in the United States. Includes principles of planning for recreational use of open land, forests, farms and water.
370. **Dance Survey (3).** Lec. 2, Lab. 3. Pr., completion of two or more dance courses, or permission of the instructor.  
Designed to instruct, guide and develop the student in a more adequate understanding of all areas of dance and provide an opportunity for participation and performance on an advanced level beyond that of the service courses.

372. **Dance Production and Rhythmic Demonstrations (3).** Lec. 2, Lab. 3.  
Apprenticeship in the fundamentals of producing dance programs, exhibitions of physical activity and festivals.
401. **Organization and Administration (5).** Lec. 5. Fall and Spring. Pr., senior standing.  
Administration of intramural and physical education activities; also the construction and care of the physical education plant and departmental organization.
404. **Athletic Injuries, First Aid and Safety (5).** Lec. 4, Lab. 2.  
Athletic injuries as to care, prevention, and correction. Developing the knowledge, skills, and techniques of first aid leading to an Instructor's rating in First Aid.
405. **Physiology of Muscular Activity (3).** Pr., VM 220-221.  
Inter-relationships of muscular activity and physiological variations.
416. **Adaptive Physical Education (3).** Lec. 3. Spring. Pr., PE 214, VM 220 and 221.  
Review of anatomy, physiology, and psychology pertaining to special programs of physical education for the temporarily and permanently handicapped, with laboratory practice in posture training and remedial gymnastics.

### Advanced Undergraduate and Graduate

409. **Advanced Hygiene (5).** Pr., junior standing.  
Principles and concepts basic to the improvement of individual and group living and the role of the home, school, and community in the development of sound physical and mental health.

### Graduate

619. **Scientific Principles Applied to Physical Education and Athletics (5).** Pr., undergraduate major or minor in health and physical education.  
Specific application of physics, physiology, and psychology to the development of physical skills and related topics including reaction time, motivation, maturation, illusions, morale, and problems of group social living in physical education and athletics.
626. **Physical Fitness, A Critical Analysis (5).** Pr., VM 220-221 or departmental approval.  
Critical analysis of physical fitness objective of physical education through inquiry into current research in medicine, physiology of muscular activity, and physical fitness appraisal and guidance.
651. **Research Studies in Health and Physical Education (5).** Pr., 18 hours of appropriate subject matter and 36 hours of psychology, and professional education.  
Review, analysis, and interpretation of available research with emphasis on designing new research to meet the changing needs of the school.
669. **Physiology of Exercise (5).** Pr., undergraduate major or minor in health and physical education.  
Experiences in the physiology of muscular activity and application of these to physical education and athletic situations.
699. **Thesis Research.** (Credit to be arranged). May be taken more than one quarter.

### Professional Courses

#### Undergraduate

101. **Orientation: Personal and Professional (3).**  
Designed to help transfers from other curricula and students enrolled in other schools achieve optimum personal, social and intellectual development as college students and to assist them in understanding teaching as a profession. (Students sectioned by area of specialization.) (Credit in PE 101 excludes credit in PE 102-3-4.)
- 102-3-4. **Orientation: Personal and Professional (1-1-1).**  
Designed to help freshmen achieve optimum personal, social, and intellectual development as college students and to assist in planning professional careers. (Students sectioned by area of specialization.) (Credit in PE 102-3-4 excludes credit in PE 101.)
414. **Teaching in Health and Physical Education in Elementary and Secondary Schools (3).** Lec. 2, Lab. 2. Pr., 9 hours of Psychology, FED 200 or equivalent; Pr., or coreq., FED 300 or equivalent.  
(For description, see page 280.)
423. **Program in Health and Physical Education in Elementary and Secondary Schools (3).** Lec. 2, Lab. 2. Pr., 9 hours of Psychology, FED 200 or equivalent; Pr., or coreq., FED 300 or equivalent.  
(For description, see page 280.)

Undergraduate students with a major in health, physical education and recreation will pursue a minor selected from some other teaching area in the secondary school

program or in one of the areas included in the twelve-grade program. (For appropriate course in Teaching or Program, see SED, page 314, IED, page 280, and VED, page 321.)

425. **Student Teaching in Health and Physical Education in Elementary and Secondary Schools (10 or 15).** Lec. 5, Lab. 20. Pr., 9 hours of Psychology, FED 200 or equivalent; FED 300 or equivalent, two courses in Teaching and Program, and junior or senior standing.  
(For description, see page 280.)
429. **Problems of Health Education and Health Observation of School Children (5).** Pr., junior standing.  
Designed to help the teacher with the details of health observation and to aid in health guidance of individual pupils as well as to acquaint the teacher with the health services available through local and state departments.

### Graduate

The following courses are organized and taught on a twelve-grade basis:

646. **Studies in Education (1-3).** Pr., one quarter of Graduate study.  
Study of a problem using research techniques to be selected in consultation with the supervising professor. A problem should be selected which will contribute to the program of the student. (Credit in ED 651 prior to 1960 excludes credit in this course.)
652. **Curriculum and Teaching in Health and Physical Education in Elementary and Secondary Schools (5).** Pr., 18 hours of appropriate subject matter and 36 hours of psychology and professional education.  
A critical study of teaching practices and reappraisal of selecting experiences and content for curriculum improvement.
653. **Organization of Program in Health and Physical Education in Elementary and Secondary Schools (2-5).** Pr., 18 hours of appropriate subject matter and 36 hours of psychology and professional education.  
Advanced course devoted to a study of program, organization, and development of basic and supplementary materials for guiding teachers, faculties, and school systems in the continuous improvement of curriculum and teaching practices.
654. **Evaluation of Program in Health and Physical Education in Elementary and Secondary Schools (2-5).** Pr., 18 hours of appropriate subject matter and 36 hours of psychology and professional education.  
Evaluation and investigation of teaching effectiveness with attention also given to the utilization of human and material resources and the coordination of health and physical education with the total school program and with other educational programs of the community.

### History and Political Science (HY)

*Head Professor Reynolds*

*Professors Ivey, Partin, and Rea*

*Research Professor McMillan*

*Associate Professors Belser, Johnson, Kendrick, Naylor, Reagan, and Williamson*

*Assistant Professors McNorton, Metzger, Owsley*

*Instructors Atkins, Findley\*, Roberson, Shell\*, and Weissinger\**

101. **History of the United States (5).**  
The history of our country to 1865. Required of majors and minors in the Social Sciences in the School of Education.
102. **History of the United States (5).**  
The history of our country since 1865. Required of majors and minors in the Social Sciences in the School of Education.
- 105-205-305-405. **Current Events (1).**  
The events of the world today based on current periodicals.
107. **United States History (5).**  
General survey of American History covering important phases from the period of discovery and colonization to the present. Credit for this course excludes credit for HY 101 or 102.
204. **History of the Modern World (3).** General elective. (Credit in History 208, 312, and 313 excludes credit for this course.)  
Brief survey of major periods of modern history and the factors contributing to the modern world civilization. Primarily intended for students in Engineering curricula.

\* Temporary.



206. **United States Government (5). Pr., sophomore standing. (Credit in HY 209 excludes credit for this course.)**  
A survey course in national, state, and local government.
207. **World History (5). Pr., sophomore standing.**  
A survey of the leading events in World History from ancient times to 1648.
208. **World History (5). Pr., sophomore standing.**  
A survey of the leading events in World History from 1648 to the present.
209. **National Government (5). Pr., sophomore standing. (Credit in HY 206 excludes credit for this course.)**  
Advanced course in nature, theory and practice of national government in the United States.
210. **State Government (5). Pr., sophomore standing.**  
Advanced course in the nature, theory and practice of state and municipal government of the United States with emphasis on Alabama government.
311. **Medieval History (5). Pr., junior standing.**  
Europe from the fall of the Roman Empire to the Age of Discovery.
312. **Modern European History (5). Pr., junior standing.**  
Europe from the Age of Discovery to 1815.
313. **Recent European History (5). Pr., junior standing.**  
Europe since 1815, with especial emphasis on the period since World War I.
314. **United States Colonial History (3). General elective. Pr., junior standing.**  
The political, economic and social history of the colonies from their founding through the American Revolution.
315. **International Organization (3). General elective. Pr., junior standing.**  
The evolution of international organization from the beginning through the United Nations.
322. **The United States in World Affairs (3). General elective. Pr., junior standing.**  
The influence which the United States has exerted in international affairs. (Excludes credit for HY 421.)
371. **History of the West (3). General elective. Pr., junior standing.**  
The development of the West and of its influence on American history.
403. **The Age of Jefferson and Jackson (5). Pr., junior standing.**  
United States history from the establishment of the government under the Constitution through the Compromise of 1850.
404. **Recent United States History (5). Pr., junior standing.**  
United States history since 1900.
406. **The Civil War and Reconstruction (5). Pr., junior standing.**  
The political, economic, social, and military aspects of the period covered.
407. **Political Science (5). Pr., HY 206 or 209 and junior standing.**  
A systematic study of the nature, scope, and methods of political science; the origin, forms, and functions of the state, with special emphasis on the development of political theory.
408. **United States Political Parties (5). Pr., junior standing.**  
The development of political parties, their policies and influence in United States history.
409. **Constitutional History of the United States (5). Pr., junior standing.**  
Survey of the origins and development of the Constitution of the United States.
410. **Political Theory (5). Pr., junior standing.**  
History of political thought from ancient times to the present.
411. **Local Government (5). Pr., junior standing.**  
County, city, and town governments, with particular emphasis on their operation in Alabama.
412. **World Politics (5). Pr., junior standing.**  
Methods, motives and reasons governing the political and international relations between the nations of the world, including the effect of the political and economic systems on these relations.
413. **Public Administration (5). Pr., HY 206 or HY 209 and junior standing.**  
Theory and practice of organizing and administering the institutions of government, with particular attention to the problems of reorganization of departmental structure, the civil service, and related personnel matters, and the role of personal relations and partisan politics in administration.
414. **Comparative Government (5). Pr., HY 206 or HY 209 and junior standing.**  
A comparative study of the governments of other nations, with emphasis on the contrast between the parliamentary system as exemplified in the governments of Great Britain, France, other Western European nations, and Canada, and the presidential system of the United States.
419. **Southern Politics (5). Pr., HY 206 and HY 209 or HY 210 and junior standing.**  
An analytical survey of regional politics emphasizing case studies, voting patterns, political strategy, current political groups and factionalism, taught from the viewpoint of political science rather than history.

420. **History of Russia (5). Pr., junior standing.**  
The Russian people from early times to the present. Particular emphasis is laid on present domestic institutions and foreign policy.
421. **A History of U.S. Diplomacy (5). Pr., HY 107 and junior standing.**  
Chief events in our relations with foreign powers from the Revolutionary War to the present, and a study of the organization and working of our diplomatic machinery. (Excludes credit for HY 322.)
451. **The Far East (5). Pr., junior standing.**  
A brief history of the development of the civilizations of the Far East from early times to the present. Emphasis is placed on internal affairs and institutions.
452. **History of Latin America (5). Pr., junior standing.**  
A study of the political, social and economic history of the Latin American States with emphasis on the inter-relations with the United States.
460. **Great Leaders of History (5). Pr., junior standing.**  
A study of some world leaders and their relationship to the great movements of history.
472. **History of England (5). Pr., junior standing.**  
A brief history of the political, economic and social development of England.
481. **History of Alabama (5). Pr., junior standing.**  
A brief history of Alabama from the beginning to the present.
482. **History of the South (5). Pr., junior standing.**  
A survey of the political, economic and social development of the South from colonial times to the present.

## GRADUATE COURSES

625. **United States Domestic Policy to 1865 (5).**
626. **United States Domestic Policy Since 1865 (5).**
627. **United States Foreign Policy to 1865 (5).**
628. **United States Foreign Policy Since 1865 (5).**
629. **Historical Methods (5).**
630. **The Old South (5).**
631. **The New South (5).**
632. **Historical Laboratory: A Documentary History of the United States (5).**
633. **English and European History (5).**
699. **Research and Thesis (5).**

## Home Economics (HE)

*Dean Spidle**Professor Rose**Associate Professors Arnold, Caudle, Douty, Layfield, Prather, Ritchie, Spencer, and Van de Mark**Assistant Professors Bliss, Cannon, Hinton, Morrill, Morton,**Rush, Terrill, and White**Instructor Lorendo*

## Professional Courses

100. **Freshman Problems (5). Summer and Fall.**  
A survey of the professional field of Home Economics; areas of specialization; study of opportunities and careers through lectures, readings and visits to laboratories for teaching and research.
104. **Related Art (5). Lec. 2, Lab. 6. Each quarter.**  
A study of related elementary art and design. Emphasis is placed on the application of art study to the home.
301. **Audio-Visual Education in Home Economics (3). Lec. 3. Pr., junior standing in Home Economics.**  
A study of the use and development of illustrative and demonstration materials in the fields of interest to home economists.
304. **Home and Family Life (3). Lec. 3. General elective. Each quarter.**  
A study of the relationships of family members, economic and social problems at all age levels, and development tasks of individuals. Open to men and women.
306. **Personal Appearance and Social Interaction (3). General elective. All quarters.**  
Good grooming, its contributing factors and their influence on social and business relations.

401. **Extension Organization and Methods (5).** Winter, Summer.  
History, organization, and program planning of extension and educational methods of communication.
421. **An Evaluation of the Major Field (5).** Pr., junior standing.  
An evaluation of the possibilities of the major field and the working techniques involved in some of the positions available.
431. **Senior Seminar (3).** Fall, Spring. Pr., junior standing and a major in Home Economics.  
Required for all Home Economics majors. Survey and discussion of recent studies on opportunities and responsibilities for careers in Home Economics; analysis of characteristics, abilities, and skills necessary for success.

#### GRADUATE COURSES FOR ALL MAJORS

421. **An Evaluation in the Major Field (5).**  
(See description carried in undergraduate listing.)
- 601-2. **Seminar in Home Economics (5-5).**  
Students make reports on the recent literature in the field of home economics. Seminar may be taken in any department: child development, clothing and textiles, foods and nutrition, or home management.
- 603-4. **Administration in Home Economics (5-5).**  
A study of administrative policies and procedures dealing with staff, personnel, curricula, student guidance, current trends, new legislation in education, budget implications, and program evaluation. This study is developed through lectures, group discussions, visitations to educational projects, and by visiting administrators.
605. **Methods of Research in Home Economics (3).**  
A study of research and investigation methods applicable to the various areas of Home Economics.
609. **Research Studies in Home Economics (2-5).**  
Independent, advanced work on an approved project under the supervision of a professor in the student's chosen field of study.
651. **Audio-Visual Aids in Home Economics (5).**  
This course is designed to aid home economists in analyzing, evaluating, organizing, and accumulating illustrative materials.
699. **Research and Thesis. Credit to be arranged.**  
Required of all students under the Thesis Option in any field.

#### Clothing and Textiles

105. **Fundamentals of Clothing (5).** Lec. 2, Lab. 8.  
Selection of design and fabric; cutting; fitting and construction of garments for personal use.
205. **Clothing for the Family (5).** Lec. 3, Lab. 6. Each quarter. Pr., HE 105 or equivalent.  
A study of the economics of clothing for the statistical family group. Suitable garments are planned and made for members of the family.
215. **Clothing Design (5).** Lec. 2, Lab. 6. Fall, Spring. Pr., HE 104, 105.  
A study of color, line, form and texture as a basis for designing apparel.
305. **Tailoring (3).** Lab. 9. Winter, Summer. Pr., HE 205, junior standing.  
Consists of selection of fabric and tailoring of a suit or coat.
315. **Textiles (5).** Lec. 3, Lab. 4. Fall. Pr., CH 103, 104.  
The principal aim of the course is the development of sound judgment in the selection of textiles for personal and household use.
325. **Fundamentals of Retailing (5).** Winter. Pr., EC 200, junior standing.  
A study of the practices and policies of retail stores.
385. **Retail Training (8).** Fall. Pr., HE 325.  
Three months practical experience with pay in large department store. Students are given formal instruction and supervision. Scheduled only by pre-arrangement.
345. **Creative Crafts (1-2-3).** Lab. 9. General elective. Each quarter.  
A study of design and execution of creative crafts; viz., metal work, leatherwork, ceramics, weaving, fabric decoration.
355. **Consumer Textiles (3).** Lec. 3. General elective. Fall, Winter, Spring.  
A study of textile fabrics, finishes, and trade practices with special emphasis on consumer problems.
405. **Creative Costume Design (5).** Lec. 2, Lab. 9. Spring. Pr., junior standing, HE 215, and two quarters of clothing construction.  
Consists of making dress forms, designing, draping and executing original designs. Designers and their methods are studied.
415. **History of Textiles (5).** Lec. 5. Pr., elementary art and junior standing.  
A study is made of the development of the textile industry and of fabric design from the earliest times to the present day.

425. **History of Costume (5). Lec. 5. Pr., elementary art and junior standing.**  
A study of the outstanding historic modes in dress for men and women from early times to the present day.
435. **Textile Testing (5). Lec. 2, Lab. 6. Winter. Pr., HE 315.**  
Testing household and apparel textiles with standard textile testing equipment according to A.S.T.M. methods, and the application of data found to better consumer understanding and practices.

## GRADUATE COURSES

650. **Flat Pattern Designing (5). Pr., 15 quarter hours undergraduate clothing.**  
A study of commercial methods of pattern making. Developing a foundation pattern from which to design and cut garments. Attention is given to variations from the norm of human body measurements and to the need for further research in designing for various age groups.
652. **Clothing and Textiles Literature (5).**  
A study of written material in the field of Clothing and Textiles with special emphasis on current periodicals, pamphlets, and reports of recent research. Required of all candidates for the master's degree in Clothing and Textiles.
653. **Economics of Clothing Consumption (5). Pr., EC 200, HE 205.**  
A critical examination of the literature on Clothing and Textiles economics, modern trends in manufacture and distribution and labor laws and their influence on clothing.
654. **Special Problems in Clothing Economics (5). Pr., HE 653.**  
A study of individual family problems relating to the economics of clothing and textiles, with practical application to the present day consumer.
655. **Problems in Home Decoration (5).**  
The undergraduate course, HE 313, is used as a basis for advanced work along the same lines. Problems in valuing choice of materials and arrangements of exteriors as well as interiors of the home are made the topic of minor research.
656. **Speed Techniques in Clothing Construction (5). Pr., 10 quarter hours undergraduate clothing.**  
A study of recent trends toward rapid construction and of the problems and possibilities of bringing commercial methods into the home or classroom. Minor research in newer methods of clothing construction.
657. **Detergency and Cotton Textiles (5). Pr., HE 315 or equivalent.**  
A study of the chemical relation of detergents, water, bleach, and mechanical action to cotton fibers (cellulose).
658. **Chemical and Physical Analysis of Textiles (5). Pr., HE 315 or equivalent.**  
The study and application of the theory of A.S.T.M., A.A.T.C.C., and other standardized procedures.
659. **Modern Fibers and Fabrics (5). Pr., HE 315 or equivalent.**  
A study of textiles as they actually are and an evaluation of the individual properties and characteristics peculiar to all fibers.

## Family Life and Early Childhood Education

207. **Principles of Child Development (3). Lec. 2, Lab. 2. Fall, Winter, Spring.**  
Introduction to principles of growth and development, with emphasis on infant development. Students observe in the Child Study Laboratories and other situations involving young children.
407. **Growth and Development of Children (5). Lec. 3, Lab. 6. Pr., PG 211, SY 201.**  
A study of the mental, physical, social and emotional growth and development of children with emphasis on the early years. Students observe and participate in the care of children in the child study laboratories.
417. **Guidance of Children (5). Lec. 3, Lab. 6. Pr., HE 407, and junior standing.**  
A study of the environmental factors affecting the development of children in the home and community. Emphasis is given to principles and methods of guidance. Students participate in the guidance of the children in both the nursery school and kindergarten.
437. **Special Problems in Child Development Nursery School and Kindergarten Education (5). Lec. 3, Lab. to be arranged. Pr., junior standing.**  
A detailed study of the organization and management of a nursery school and kindergarten, including selection of equipment. Special units of work will be given in reading and story telling, nature, music, art, and construction of play materials for children.
447. **Nursery School and Kindergarten Procedures (5). Lec. 2, Lab. 9. Pr., junior standing and HE 437.**  
An advanced course for majors in Nursery School and Kindergarten Education. The student will spend the equivalent of three mornings in the laboratory each week with increased responsibility for the guidance of children under supervision of the staff.

457. **Family Relationships (5).** Fall, Winter, Spring. Pr., HE 207, HE 407, senior standing.  
A study of interpersonal relationships among family members, with attention to human development, training and guidance of children.

#### GRADUATE COURSES

670. **Personality Development (5).**  
A general study of personality and the factors which influence development.
672. **Parent Education (5).** Lec. 3, Lab. 4. Pr., HE 407.  
Group and individual conferences with parents.
675. **Pre-School Guidance (5).** Lec. 3, Lab. 4-6. Pr., HE 407.  
An application of methods and techniques of guidance in laboratory groups of pre-school children.
676. **The Family and Its Relationships (5).**  
Intensive study of the family and its effect upon personality development.
677. **Readings in Family Life and Child Development (5).**  
Study and evaluation of current literature and research concerning the pre-school child; the school-age child; the adolescent; the young adult; problems of later maturity; changing family patterns.
678. **Advanced Child Development (5).** Pr., HE 407.  
An intensive and extensive study of growth and development of children with emphasis upon environmental and developmental factors affecting growth and development and implications for guidance. Laboratory experiences where needed.

#### Foods and Nutrition

102. **Foods and Nutrition (5).** Lec. 3, Lab. 4. Each quarter.  
Elements of nutrition and principles underlying the fundamental processes and standards of food preparation.
202. **Meal Management (5).** Lec. 3, Lab. 6. Each quarter. Pr., HE 102.  
Planning of meals with emphasis on scientific principles of nutrition, aesthetic value, management of time and the food budget on various economic levels.
302. **Table Service (3).** Lec. 3. General elective. Each quarter.  
A study of the accessories used for table service in their relation to each other and to the complete service of meals. Principles of flower arrangements are studied and forms of the different food services in the home.
312. **Food Science (5).** Lec. 4, Lab. 3. Pr., CH 203.  
Chemistry of carbohydrates, fats, proteins, vitamins and minerals applied to human nutrition.
322. **Food Preservation (3).** Lec. 1, Lab. 6. Fall and Summer. Pr., VM 311 (Bact.).  
Study of the theory and practice of preservation of foods by fermentation, crystallization, canning and freezing with special emphasis placed in better quality of foods preserved at home.
332. **Nutrition and Dietetics I (5).** Lec. 3, Lab. 4. Fall. Pr., HE 312, VM 210.  
Application of the various factors in influencing the body's need for food. For majors in Nutrition or Nursing Science.
342. **Nutrition and Dietetics II (5).** Lec. 3, Lab. 4. Winter. Pr., HE 332.  
A continuation of HE 332.
352. **Institutional Organization (3).** Lec. 3. Winter, Summer.  
Organization and administration work in residence halls, clubs, lunch rooms, tea rooms, hotels and hospitals. Study of physical equipment, personnel, ethics, marketing conditions, food purchases, records and accounts. Required field trips to residence halls, hospitals, etc., for observation.
362. **Problems in Community Nutrition (3).** Pr., HE 342, or HE 372.  
Methods of presenting nutrition information to organizations engaged in community work. Field experience.
372. **Nutrition and Health (3).** Lec. 3. General elective. Each quarter.  
Study and application of the fundamentals of human nutrition. Food requirements of different age levels and selection of food at different cost levels are considered. Open to all students except Nutrition or Nursing Science majors.
402. **Diet Therapy (5).** Lec. 3, Lab. 4. Spring. Pr., junior standing, HE 332, and HE 342.  
Application of principles of nutrition to various periods of stress and as a therapeutic aid in treatment of disease.

412. **Quantity Food Production (5).** Lec. 3, Lab. 6. Fall. Pr., junior standing and HE 202.  
Institutional menu planning, food buying, preparation and serving of foods. Use, operation and maintenance of equipment. University kitchens are used for the laboratory experience.
432. **Cafeteria Management (5).** Lec. 3, Lab. 6. Spring. Pr., junior standing and HE 352.  
Layouts, personnel management, foods and equipment applicable to cafeterias. Course also includes administrative problems, records, portion and cost controls. (Field trips.)
442. **Catering (3).** Lec. 1, Lab. 6. Winter. Pr., HE 202.  
Advanced food preparation in relation to needs in field of catering, applies to clubs, hotels and other institutions such as colleges. Problems studied include proper decoration, settings and table accessories.
452. **Food for the Young Child (5).** Lec. 3, Lab. 4. Winter. Pr., HE 102 and 202.  
Food and its preparation for feeding during the pre-natal period and feeding the infant after birth—through the preschool years. The college nursery school serves as a laboratory for this course.
462. **Experimental Foods (5).** Lec. 3, Lab. 4. Pr., junior standing, HE 202, and CH 203.  
Causes and effects of various methods of food preparation. It includes basic chemical reactions involved in food combinations. The course gives a foundation for work in food research.
472. **Community Nutrition (5).** Pr., junior standing and HE 372 or HE 332 or HE 342.  
Problems involved in improvement of nutrition practices in the community, as it applies to high school teaching and Extension Service programs.
492. **Infant and Child Nutrition (5).** Pr., junior standing and HE 372 or HE 332 and HE 342.  
Nutrition requirements for growth from prenatal life through adolescence.

## GRADUATE COURSES

620. **Experimental Cookery (5).** Pr., or corequisite, CH 304.  
Food preparation from the experimental standpoint giving instruction in techniques used in measuring quality of food. This course gives a foundation in advanced food research.
621. **Advanced Foods (5).** Pr., HE 202 and HE 462.  
Chemical and physical changes of importance in food preparation and processing.
622. **Problems in Food Preservation (5).** Pr., VM 811 and HE 332.  
Various problems which grow out of advanced study of preservation of foods. These problems are subjects for minor research.
623. **Readings in Food or Nutrition (5).** Pr., HE 372, 332, CH 203.  
A critical survey of current literature in nutrition and food consumption.
624. **Advanced Nutrition I (5).** Pr., HE 332, HE 342, CH 203, CH 208.  
Carbohydrates, fats, proteins and the minerals.
625. **Advanced Nutrition II (5).** Pr., HE 332, CH 207, CH 208.  
The vitamins and their interrelationships.
628. **Research Methods in Nutrition (5).**  
Special problems in human nutrition.

## Home Management and Family Economics

233. **Home Equipment (5).** Lec. 3, Lab. 4. Fall, Spring.  
Home equipment study with emphasis on selection, use and care.
303. **The House (5).** Lec. 2, Lab. 6. Fall, Winter, Spring.  
Planned to give the student an appreciation of basic plans, both period and modern, from the standpoint of utility, beauty and economy.
313. **Home Furnishing (5).** Fall, Spring, Summer. Pr., HE 104.  
A study of home furnishings both from an aesthetic and practical standpoint. This includes the recognition of period furniture and its adaptability to the home of today.
323. **Home Management (5).** All quarters. Pr., HE 202.  
The factors affecting the management of the home for the purpose of meeting individual needs and creating satisfying family environment, emphasis on problems involving the use of time, money, and energy.
333. **Cleaning and Lighting Equipment (5).** Lec. 2, Lab. 6. Fall. Pr., PS 207, HE 233.  
Principles underlying the operation and use of lighting, laundry and other cleaning equipment.



343. **Interior Home Problems (5).** Lec. 3, Lab. 4. Spring.  
Harmonious combinations of present day furnishings, materials, and finishes.
353. **Community and Family Health (3).** Lec. 2, Lab. 2. General elective.  
Health problems related to the community and family including a survey of available health facilities with field trips.
433. **Food Equipment (5).** Lec. 3, Lab. 4. Winter, Summer. Pr., junior standing, PS 207, HE 233.  
Principles underlying the operation and use of food equipment.
443. **Home Management Residence (5).** Each quarter. Pr., junior standing, HE 202 and HE 323.  
Residence in the home management house gives actual experience in different phases of homemaking. Stress is placed on the process of management and satisfactory group relations.
453. **The Consumer and the Market (5).** Lec. 5. Fall. Pr., junior standing and EC 200 or 201.  
Consumer problems connected with marketing; type of retail outlets, credit, advertising, standardization, labeling, and price policies.
463. **Family Economics (5).** Lec. 5. Winter. Pr., junior standing, EC 200, HE 253.  
Budgeting and consumer problems faced by the family.

#### GRADUATE COURSES

629. **Community Nutrition and Consumer Economics (3).** Pr., graduate standing.  
A three-week course to be offered in summer quarters.
630. **Home Management Supervision (5).** Pr., HE 323 and HE 443.  
Management problems in supervision. The three home management houses will be used for observation and study.
631. **Trends in Home Management (5).** Pr., HE 323 and HE 443.  
Developments and trends in home management at the state, regional, and national levels.
632. **A Survey of Household Equipment (5).** Lec. 3, Lab. 4.  
Equipment in the modern home. Equipment is tested and evaluated in the laboratory where instructional and experimental studies are carried on.
633. **Family Housing (5).** Lec. 5. Pr., EC 200, HE 303, HE 323.  
The history and development of American housing; economical, legal and social aspects; present trends.
634. **Economic Problems of Families (5).** Pr., HE 323, HE 453.  
Income distribution, cost of living, the business cycle, taxation, and economic provisions for unemployment, health, accidents, old age, and dependents.
635. **Advanced Home Management and Equipment (3).** Pr., graduate standing.  
A three-week course offered in summer quarters only.

#### Horticulture (HF)

*Professors Ware, Furuta, and Orr*  
*Associate Professors Amling, Fisher, Harris, and Jones*  
*Assistant Professors Moore and Norton*  
*Instructor Martin*  
*Professor Emeritus Isbell*

#### Ornamental Horticulture

101. **Introduction to Ornamental Horticulture (1).** Lec. 1. Winter.  
An orientation course for freshman students introducing all fields in Ornamental Horticulture.
221. **Landscape Gardening (5).** Lec. 3, Lec.-Dem. 4. Spring, Fall.  
Principles of landscape gardening applied to the development of small home grounds and school grounds. The lecture-demonstration periods are devoted to the study of the identification and use of ornamental plants, landscape drawings, and the propagation and maintenance of ornamental plants.
222. **Plant Materials (5).** Lec. 3, Lab. 4. Fall.  
Identification, culture and use of ornamental trees in landscape plantings.
223. **Plant Materials (5).** Lec. 3, Lab. 4. Winter.  
Identification, culture, and use of broadleaf and narrowleaf evergreens in landscape plantings.
224. **Plant Propagation (5).** Lec. 3, Lec.-Dem. 4. Winter. Pr., BY 201-2.  
Basic principles and practices involved in the propagation of horticultural plants.
225. **Flower Arranging (3).** Lec. 2, Lab. 2. Fall. General elective.  
Principles and practices of flower arranging for the home.

321. **Plant Materials (5).** Lec. 3, Lab. 4. Spring.  
Identification, culture and use of deciduous shrubs and small trees in landscape plantings.
322. **Garden Management (5).** Lec. 3, Lab. 4. Spring.  
Identification, culture and use of annuals and perennials.
323. **Floriculture (5).** Lec. 3, Lab. 4. Fall. Pr., HF 224, BY 201-2.  
Principles and practices of greenhouse construction and management.
324. **Floriculture (5).** Lec. 3, Lab. 4. Winter. Pr., HF 323.  
Principles and practices of commercial cut flower production.
325. **Landscape Design I (5).** Lab. 15. Pr., HF 221.  
Planning of large and small home grounds.
326. **Landscape Design II (5).** Lab. 15. Pr., HF 221, 325.  
Planning of public areas and grounds of public buildings, including general layout, planting and detail treatment of special areas.
327. **Landscape Construction (5).** Lab. 15 or Lec. 3, Lab. 4. Pr., HF 325 and 326.  
Planning and preparation of specifications for construction of structures that are considered a part of the landscape treatments of an area. Grading and modification of land areas for various purposes and problems in surface and underground water control to be included.
421. **Arboriculture (5).** Lec. 3, Lab. 4. Fall. Pr., BY 306, 309, and junior standing.  
Principles and practices of the care and maintenance of trees and shrubs, including pruning, tree surgery, transplanting, and fertilization.
422. **Floriculture (5).** Lec. 4, Lab. 3. Spring. Pr., HF 323 and junior standing.  
Principles and practices of the commercial production of greenhouse pot plant crops.
423. **Nursery Management (5).** Lec. 3, Lab. 4. Spring. Pr., HF 224, BY 306, AY 304 and junior standing.  
Principles and practices of the management of a commercial ornamental nursery.
424. **Plant Composition (5).** Lec. 3, Lab. 4. Spring. Pr., HF 222, 223, 321, and junior standing.  
Principles and practices of the combination and use of ornamental plants in landscape plantings.
425. **Flower Shop (5).** Lec. 3, Lec-Dem. 4. Spring. Pr., HF 422, permission of instructor.  
Principles and practices of flower shop management and floral designing.
- 426-27-28. **Minor Problems (5-5-5).** Lec. 1, Lab. 8. Any quarter. Pr., senior standing and permission of instructor.  
Students are assigned minor problems in either Landscape Maintenance, Nursery Management or Floriculture, on which independent library, field or greenhouse investigations are made, under supervision of instructors.
429. **Advanced Plant Propagation (5).** Lec. 3, Lab. 4. Spring. Pr., HF 224, BY 306, and junior standing.  
Commercial propagation of Horticultural plants with emphasis on the physiological and anatomical principles.
430. **Marketing Horticultural Specialty Products (5).** Lec. 4, Lab. 3. Pr., HF 324, HF 422, HF 423.  
Channels and methods of distribution of floricultural and nursery products.
431. **Advanced Landscape Gardening (5).** Lec. 3, Lab. 4. Fall or Spring. Pr., BY 201, HF 221, graduate standing.  
Principles and practices applying to the use of ornamental plant material in landscaping. (Selected portions of this course may be offered as a 3 hour credit in the Master of Agriculture program.)

### General Horticulture

201. **Orchard Management (5).** Lec. 3, Lab. 4. Each quarter.  
Propagating, planting, pruning, cultivating, fertilizing, spraying, thinning, harvesting, grading, storing and marketing the most valuable fruits and nuts grown in the South.
308. **Vegetable Gardening (5).** Lec. 3, Lab. 4. Each quarter.  
Origin growth, storage, use, and varieties of vegetables commonly grown in home gardens.
401. **Truck Crops (5).** Lec. 3, Lab. 4. Fall. Pr., HF 308 and junior standing.  
Production and marketing of truck crops. Special consideration is given to crops grown in the South.
404. **Fruit Growing (5).** Lec. 4, Lab. 2. Winter. Pr., HF 201 and junior standing.  
Production and marketing of commercial tree fruits grown in the South.
405. **Small Fruits (5).** Lec. 4, Lab. 2. Spring. Pr., HF 201 and junior standing.  
Principles and practices involved in the production of strawberries, grapes, blueberries, and brambles.

406. **Nut Culture (5).** Lec. 4, Lab. 2. Fall. Pr., HF 201 and junior standing. Production and marketing of pecans, walnuts, chestnuts, tung, and filberts.
407. **Preparation and Handling of Fruits and Vegetables (5).** Lec. 3, Lab. 4. Spring. Harvesting, grading, packaging, and handling of fruits and vegetables for market.
408. **Commercial Vegetable Crops (3).** Lec.-Lab. 4. Spring or Summer. Pr., HF 308 and graduate standing. Application of research information to the commercial production and handling of the principal vegetable crops. (Credit for both HF 408 and 401 may not be used to meet requirements for the Master's degree.)
410. **Recent Advances in Small Fruits (3).** Spring and Summer. Pr., HF 201 and graduate standing. Scientific advances in small fruits and their application to small fruit culture in Alabama. (Credit for both HF 410 and HF 405 may not be used to meet requirements for the Master's degree.)

#### GRADUATE COURSES

601. **Experimental Methods in Horticulture (5).** Lec. 3, Lab. 6. Any quarter. Purposes of research, discovery, and progress as related to the scientific method; research programs, horticultural programs, selecting projects, reviewing literature, preparing project outlines, conducting experiments, recording data, analyzing data, and publication of results.
602. **Horticultural Literature (5).** Lec. 3, Lab. 6. Any quarter. Review of horticultural literature and history of horticultural enterprises, including vegetables, fruits, and ornamentals. The laboratory consists of library assignments and reports.
603. **Special Problems in Horticulture (3-5).** Credit to be arranged. All quarters. Pr., graduate standing. Selected problems in vegetable production, pomology, food technology, or ornamental horticulture.
699. **Research and Thesis.** Credit to be arranged. May be taken more than one quarter.

### Interdepartmental Education (IED)

Included in this section are program areas and course listings designed and taught on the interdepartmental basis. The subheadings reflect the nature and scope of the offerings.

#### Curriculum and Teaching — Elementary-Secondary

##### Teaching, Program, and Student Teaching

Students in either secondary or elementary education pursuing a curriculum leading to certification for teaching in a particular subject-matter field in elementary and secondary schools will take the Teaching and the Program courses in the teaching field in which certification is expected. These courses may be scheduled and taught as separate courses, related courses, or as a unified program.

414. **Teaching in Elementary and Secondary Schools (3).** Lec. 2, Lab. 2. Pr., 9 hours Psychology, FED 200 or equivalent; Pr., or coreq., FED 300 or equivalent. (A) Art, (C) Dramatic Arts, (I) Mental Retardation, (J) Music, (M) Speech, (N) Speech Correction.
423. **Program in Elementary and Secondary Schools (3).** Lec. 2, Lab. 2. Pr., 9 hours of Psychology, FED 200 or equivalent; Pr., or coreq., FED 300 or equivalent. (A) Art, (C) Dramatic Arts, (I) Mental Retardation, (J) Music, (M) Speech, (N) Speech Correction.
425. **Student Teaching in Elementary and Secondary Schools. Twelve Grades (10 or 15).** Lec. 5, Lab. 20. Pr., 9 hours of Psychology, FED 200 or equivalent; FED 300 or equivalent, two courses in Teaching and Program, and junior or senior standing. (A) Art, (C) Dramatic Arts, (I) Mental Retardation, (J) Music, (M) Speech, (N) Speech Correction.

#### Graduate

Courses 651, 652, 653, or 654, apply to the following areas of the school program: (A) Art, (C) Dramatic Arts, (E) Gifted, (I) Mental Retardation, (J) Music, (M) Speech, and (N) Speech Correction.

648. **Advanced Study of Curriculum and Teaching (5).** Pr., FED 647 or consent of departmental chairman.  
Major issues, frontier developments, and trends in the improvement of curriculum and teaching in elementary and secondary schools.
651. **Research Studies in Education in Areas of Specialization (5).** Pr., 18 hours of appropriate subject matter and 36 hours of psychology and professional education.  
Review, analysis, and interpretation of available research with emphasis on designing new research to meet the changing needs of the school.
652. **Curriculum and Teaching in Areas of Specialization (5).** Pr., 18 hours of appropriate subject matter and 36 hours of psychology and professional education.  
A critical study of teaching practices and reappraisal of selecting experiences and content for curriculum improvement.
653. **Organization of Program in Areas of Specialization (2-5).** Pr., 18 hours of appropriate subject matter and 36 hours of psychology and professional education.  
Advanced course devoted to a study of program, organization, and development of basic and supplementary materials for guiding teachers, faculties, and school systems in the continuous improvement of curriculum and teaching practices.
654. **Evaluation of Program in Areas of Specialization (2-5).** Pr., 18 hours of appropriate subject matter and 36 hours of psychology and professional education.  
Evaluation and investigation of teaching effectiveness with attention also given to the utilization of human and material resources and the coordination of areas of specialization with the total school program and with other educational programs of the community.
658. **Seminar and Independent Study in Curriculum and Teaching (5).** Pr., FED 647 and IED 648.  
Research and experimentation in elementary and secondary schools in the development of education programs and the improvement of teaching and learning. Appraisal of significant curriculum research, exploration of areas of needed research in curriculum and instruction, and study of fundamental criteria and methods for solving curriculum problems.

### Special Education — Elementary-Secondary

#### Advanced Undergraduate and Graduate

476. **The Exceptional Child (5).** Pr., junior standing.  
Deals with the etiology, incidence, diagnosis and philosophy of teaching the exceptional child. Special attention is given to the child who is physically or mentally handicapped and to the child who is mentally superior.
478. **Nature of Mental Retardation (5).** Pr., junior standing.  
Characteristics and nature of mental retardation. Etiology, identification, and classification of retardation are investigated. Social, psychological, physical, and educational implications of mental retardation are considered.

#### Graduate

643. **Education of the Physically Handicapped (5).** Pr., adequate courses in physiology and psychology.  
Characteristics of major physical disabilities; the psychology of the physically handicapped; the educational objectives with curriculum adaptations; and related aspects of a total program for the physically handicapped.
650. **Teaching the Mentally Retarded (5).** Corequisite, IED 476.  
Observation and participation under supervision in educational programs for the mentally retarded. Lectures and discussions will implement the student's work in the classroom. Students will develop and evaluate plans and programs for the special class. (For teachers pursuing a program of education for mentally retarded children.)

### School Library Science — Elementary-Secondary

#### Advanced Undergraduate and Graduate

472. **Books and Related Materials for Children (4).** Pr., junior standing.  
Examination and evaluation of printed and other types of materials in view of their relevance to the needs and interests of various age and grade levels of elementary school children. Study of selection aids, principles, and criteria for selecting materials.
482. **Organization and Administration of School Libraries (5).** Pr., junior standing.  
Basic organization of books, non-book materials, and services for effective use in school libraries. Administering the budget, selection and purchase of materials, preparation of materials for use, circulation of materials, inventory, care and repair of materials, and instruction in the use of library materials are considered.

- 484. Classification and Cataloging of School Library Materials (5).** Pr., junior standing.  
Principles and procedures of classifying and cataloging books and other printed materials, filmstrips, recordings, and community resources. The vertical file, the Dewey decimal system of classification, Wilson and Library of Congress printed cards, and subject headings are studied.
- 486. Books and Related Materials for Young People (5).** Pr., junior standing.  
Study and evaluation of books and other types of materials in relation to the interests, needs, and abilities of young people of high school age. Attention is given to selection aids, principles and criteria of selection, reading guidance, and significant investigations concerning young people's reading.
- 487. Practicum in School Library Services (4-6).** Lec. 2, Lab. 4-8. Pr., junior standing.  
Provides students with information pertaining to methods used in the operation of libraries in elementary and secondary schools. Supervised laboratory experiences are provided in materials centers containing a variety of materials for the different grade levels and involving children and youth of varying ages in the public school.

### Graduate

- 610. Reference Materials and Service (5).** Pr., 10 hours in library science at the 400 level.  
Study and evaluation of basic reference sources for effective reference service in school libraries. Elementary research methods of locating information and the role of various types of reference books as resource material in curricular units are considered.
- 611. Principles of School Librarianship (5).** Pr., 10 hours in school library science at the 400 level.  
Place and function of library service in the American educational system. Historical development of libraries; library services to teachers and pupils as an integral part of the school program; standards and administrative policies are included.
- 612. Problems in the Administration of the School Library Services (5).** Pr., 10 hours in school library science at the 400 level.  
Opportunities for study and research regarding current problems in relation to developing an effective program of school library service. Administrative plans, procedures and relationships; room and equipment planning; library regulations, personnel and committees; reading guidance and reference service; publicity, statistics, and reports; and operation, evaluation, and supervision of library services are potential areas of emphasis.
- 613. Library Services in the School and Community (5).** Pr., 10 hours in library science at the 400 level.  
School library-community relations; historical background, current trends, problems and programs of service; relation to public and rural library extension service; selection of materials on the basis of community and curriculum needs; book lists and exhibits.

### Higher Education

#### Graduate

The courses described below are designed for advanced students who are interested in positions in colleges, universities, and other post secondary-school institutions.

- 618. Organization and Administration of Higher Education (5).**  
Designed to provide a study of the organization, administration, and evaluation of institutions in terms of academic program, student personnel services, business affairs and related programs.
- 663. The American College and University (5).**  
Philosophy and function, the university and social change, the community college, academic freedom, student-faculty-community relationships; international flow of educational ideas, government cultural programs, higher education and the state.
- 665. The Community College (5).**  
The rise and development of the community or junior college in American education, its philosophy and functions; specific attention to the transfer, terminal, and community-service functions. Includes problems of organization, curriculum construction, staffing, and instructional procedures.
- 697. Student Personnel Work in Higher Education (5).**  
Theories, principles, practices, organization, administration, and evaluation of student personnel services in higher education.
- 798. Research and Thesis (5).**
- 799. Doctoral Research and Dissertation.** (Credit to be arranged).

**Industrial Engineering (IE)***Head Professor Cox**Professor Cobb**Associate Professors Coppedge and Layfield*  
*Assistant Professors Fowler, Henry, and Morgan*  
*Instructor Bell*

201. **Industrial Engineering (5).** Pr., sophomore standing.  
Fundamental principles and modern methods of control in industry; organization and relationships concerning control of materials, cost, production, purchasing, storekeeping, inventory, quality, labor relations, wages and rates, and job analysis.
204. **Digital Computer Programming (3).** Pr., sophomore standing.  
Principles of digital computer programming with special emphasis on data processing.
211. **Engineering Statistics I (5).** Pr., MH 263.  
Introduction to probability, descriptive statistics, distribution functions, and confidence limits, with emphasis upon industrial engineering applications. The nature of industrial processing which gives rise to certain distributions will be stressed.
223. **Quantitative Methods I (5).** Pr., MH 264.  
Introduction to mathematical models fundamental to industrial engineering practice with emphasis upon linear programming. Study of simplex, transportation, index, ratio analysis, and strategy models with pertinent applications.
302. **Production Control Functions (5).** Lec. 4, Lab. 3. Pr., IE 201.  
Planning, scheduling, routing, and dispatching in manufacturing operations; production control systems; mechanisms for production control. (For non-Industrial Engineering students only.)
309. **Production Estimating II (5).** Lec. 4, Lab. 3. Pr., EC 215.  
Fundamentals governing the establishment, application, and interpretation of production standards in industrial enterprises.
310. **Methods Engineering (5).** Lec. 4, Lab. 3. Pr., IE 201, IE 211 or EC 245 or MH 467.  
Study and practice in applying principles which govern motion economy; work space organization; selection of materials, jigs, fixtures, and equipment, and application of methods time measurement for the determination of the most economical method of manufacture.
311. **Time Study (5).** Lec. 4, Lab. 3. Pr., IE 310.  
Study and practice in applying principles governing the establishment of standard data in the various forms required for methods time measurement, wage incentive organizations, budgetary planning and standard cost; and the use of time measuring equipment in problems of standard data determination.
312. **Engineering Statistics II (3).** Pr., IE 211.  
Continuation of IE 211 with emphasis upon application of tests of hypothesis, regression techniques, and analysis of variance to industrial engineering problems.
314. **Electronic Data Processing Machines (3).** Pr., junior standing.  
Function and use of automatic data processing equipment, with an introduction to digital computers. (For non-Industrial Engineering students only.)
316. **Electronic Data Processing Systems (5).** Lec. 4, Lab. 3. Pr., IE 201, IE 204, IE 309, IE 310, and IE 311.  
Application of digital computers to industrial problems. (For non-Industrial Engineering students only.)
320. **Engineering Economy (5).** Pr., junior standing.  
Practical engineering studies for the economic selection of alternative structures, equipment, project, processes, and methods by comparison of costs.
322. **Statistical Quality Control (5).** Lec. 4, Lab. 3. Pr., IE 211 or EC 245 or MH 467, junior standing.  
Statistical method of quality control for economical manufacture; inspection methods; organization and procedure for quality control; determination of sample size.
324. **Quantitative Methods II (5).** Pr., IE 223, IE 312.  
Problem-solving and optimum-value models useful in industrial operations. Includes various models which are fundamental to forecasting, scheduling and loading.
406. **Problems in Industrial Management (5).** Pr., IE 302, IE 311, EC 245, and senior standing.  
Application of fundamental principles to problems of industry as guide for decisions of management. (For non-Industrial Engineering students only.)



416. **Industrial Simulation (5).** Pr., IE 204, IE 309, IE 324.  
Simulation of industrial systems through the use of various models in conjunction with the digital computer.
417. **Operations Analysis (5).** Pr., IE 201 and senior standing.  
Organized application of scientific methods and techniques to the study of operating problems of management. (For non-Industrial Engineering students only.)
420. **Materials Handling (5).** Lec. 4, Lab. 3. Pr., IE 201, IE 311, junior standing.  
Materials handling equipment, methods, and systems.
422. **Inventory Control (5).** Pr., IE 324, senior standing.  
Application of quantitative methods to the control of industrial inventories.
424. **Production Control (5).** Pr., IE 324, senior standing.  
Design of industrial production control systems.
428. **Industrial Plant Design (5).** Lec. 4, Lab. 3. Pr., EG 104, EG 105, IE 311, IE 420, senior standing.  
Design and layout of industrial plants.
430. **Contracts and Specifications (3).** Pr., senior standing.  
Contract documents; specification writing; professional relations.
432. **Plant Maintenance (3).** Pr., IE 201.  
Principles of organizing and controlling maintenance operations of industrial plants.
434. **Sales Engineering (3).** Pr., IE 201, junior standing.  
Application of appropriate principles and techniques to selling industrial products when a background knowledge of production is required.
436. **Plant Location (5).** Pr., IE 201, IE 309, IE 312, IE 320, IE 223.  
Factors and analysis techniques pertinent to the economic location of industrial plants.
438. **Safety Engineering (5).** Pr., IE 201, junior standing.  
Principles, practices, organizations, and procedures for industrial accident prevention and plant protection.
442. **Operations Research (5).** Pr., IE 309, IE 312, IE 324, IE 416.  
Introduction to the philosophy and methods of Operations Research with application to operational problems.
490. **Problems in Industrial Engineering (3).** Pr., Department Head approval, junior standing.  
Individual student endeavor under staff supervision involving special problems of an advanced nature in Industrial Engineering.

### Industrial Laboratories (IL)

*Professor Haynes*

*Associate Professor Leffard*

*Assistant Professors Goolsby, McMurtry, Stoves, and Wingard*

Courses listed below are available as electives to all students with the necessary prerequisites.

102. **Welding Science and Application (1).** Lab. 3.  
Basic principles and application of welding and cutting processes in the fabrication of metals.
103. **Machine Tool Laboratory (1).** Lab. 3.  
Introduction to metal removal processes; Basic machines of production.
104. **Sheet Metal Design and Fabrication (1).** Lab. 3.  
Methods and equipment used in design, production and fabricating of sheet metal products.
105. **Foundry Technology (1).** Lab. 3.  
Basic fundamentals involved in casting products of ferrous and non-ferrous metals.
308. **Gages and Measurements (5).** Lec. 4, Lab. 2. Pr., IL 103.  
The science of measurement as applied to production and inspection of industrial products.

### Manufacturing Processes

Courses designed to acquaint the student with the basic manufacturing processes including an analysis of machines, tools, and materials, and design of products in the respective areas indicated below:

301. **Manufacturing Processes—Casting area (3).** Lec. 3. Pr., any one shop course.  
Analysis of materials, methods, and design of cast products.
302. **Manufacturing Processes—Machining area (3).** Lec. 3. Pr., IL 103.  
Principles of machining metal products.
303. **Manufacturing Processes—Shaping, Forming, and Fabricating area (3).** Lec. 3. Pr., IL 102.  
Materials and methods involved in the production of metal products by shaping, forming, and welding processes.
405. **Problems in Welding Engineering (5).** Lec. 3, Lab. 4. Pr., IL 102.  
Advanced phases and techniques of welding and allied processes. Studies in design, weldability of metals, inspection practice, and selection of equipment.
406. **Problems in Machining (5).** Lec. 3, Lab. 4. Pr., IL 103.  
Advanced phases of metal machining with emphasis on production machines and accessories.

Courses designed chiefly for the preparation of teachers in Industrial Arts subjects and related fields.

101. **Woodworking (1).** Lab. 3.  
Introduction to machines, tools, and materials used in working with wood and plastic.
307. **General Metals (5).** Lec. 3, Lab. 4. Pr., consent of instructor.  
Design, construction and finishing art metal projects.
402. **Advanced Woodworking (5).** Lec. 3, Lab. 4. Pr., IL 101.  
Studies in design, construction, and finishing fine objects of wood.
403. **General Shops (5).** Lec. 5. Pr., senior standing.  
Problems of organization of unit shops into integrated whole for effective use in high school teaching.
415. **Shop Work for Elementary Teachers (5).** Lec. 2, Lab. 6. Pr., junior standing.  
Methods, materials, and techniques involved in conducting activity programs in schools and recreational centers.
416. **Materials of Industrial Arts (5).** Lec. 5. Pr., senior standing.  
History and use of various materials used in industry.
417. **Organization of Shop Courses (5).** Lec. 5. Pr., senior standing.  
Organization and administration of the Industrial Arts program in the public schools.
418. **Industrial Arts Design (5).** Pr., senior standing.  
Fundamentals of design as applied to Industrial Arts projects.
419. **Utilization of Machine Tools in Research and Development (1).** Lab. 3.  
Instruction in the use of machine tools for machining, fabricating and finishing components and assemblies of working models for developmental projects.
420. **Industrial Laboratory for Research & Development (1).** Lab. 3. Pr., IL 419 or any two basic courses in Industrial Laboratories or approval of instructor.  
Individualized instruction of students doing research which requires procurement, construction, and assembly of components and apparatus needed in their research programs.

#### GRADUATE COURSES

- 611-12. **Technical Problems in Industrial Arts (5-5).** Pr., graduate standing.  
Advanced study of technology and method in selected areas of Industrial Arts.

### Journalism (JM)

*Associate Professor Burnett*

English 101-2 or 103-4 is a prerequisite for all courses in journalism.

221. **Beginning Newswriting (5).**  
Introduction to newswriting, newspaper style, and mechanical practice, supplemented by work on the college newspaper.
223. **Reporting (5).** Pr., JM 221.  
Study and practice in the technical aspects of reporting and newsgathering methods, supplemented by work on the college newspaper.
224. **Copyreading and Editing (5).** Pr., JM 221.  
Methods of editing copy, writing headlines, basic make-up and proof reading.
315. **Agricultural Journalism (3).**  
Designed for students in agriculture and home economics. Introduces practices of news coverage and writing, with major emphasis on specialized fields of study.

322. **Feature Writing (5).** Pr., JM 221 or permission of the instructor.  
Gathering material for and the writing of "human interest" and feature articles for newspapers and magazines, with consideration given to the marketing of manuscripts.
323. **The Weekly Newspaper (5).** Pr., JM 221.  
Methods, problems, and policies involved in editing the weekly newspaper, as differing from the metropolitan daily.
421. **Photo-Journalism (5).**  
Uses and processes of photography in the newspaper and magazine field. Operation of press cameras and the technique of developing, printing, and enlarging of pictures is provided.
- 422-3. **Journalism Workshop (3-3).** All quarters. Pr., 15 hours of journalism, including JM 221 and 223.  
A two-quarter course giving practical experience in preparation of newspaper, radio, television, and magazine copy through supervised work with University communication media.
425. **Journalism Internship (6).** Summer. Pr., JM 221, 223, 224, and consent of instructor.  
A full-time internship of at least ten weeks with an approved publication, serving as a regular staff member under the direction of the editor.
465. **The History and Principles of Journalism (5).**  
The development of the American Press, the principles and ideals of modern journalism, and the law of the press and radio.

#### GRADUATE COURSES

605. **Agricultural Newswriting (3).** Lec. 4. Pr., 20 hours of Journalism or consent of instructor.  
Methods and problems of writing agricultural and home economics news, feature articles, and columns for publication. Special attention is given to improving communication of effectiveness between the specialist and the public.

### Laboratory Technology (LT)

*Professor Schrader*

*Instructors Attleberger and Crews*

*Special Lecturer in Medical Technology F. B. Schultz, M.D.*

101. **Orientation (1).** Fall and Winter quarters.  
Designed to acquaint students with the aims, objectives, and requirements for careers in Medical and Laboratory Technology.
301. **Hematology (5).** Lec. 3, Lab. 6.  
Study, procedures, and examinations of the blood, as recommended by the American Society of Clinical Pathologists.
305. **Serology (5).** Lec. 2, Lab. 6. Pr., VM 204.  
Theory and techniques of laboratory tests based in the antigen-antibody reaction.
401. **Advanced Hematology (5).** Lec. 3, Lab. 6. Pr., LT 301.  
Advanced study of blood cells and blood dyscrasias.
402. **Seminar in Laboratory Technology (3).** Pr., LT 301.  
The student reports from the literature on recent advances in the field of laboratory technology.
405. **Advanced Serology (5).** Lec. 2, Lab. 6. Pr., LT 305.  
Theory and techniques of the serological study of human blood.
421. **Diagnostic Apparatus (5).** Lec. 2, Lab. 9. Pr., PS 206.  
Use of such hospital equipment used in X-ray, electrocardiographic, and basal metabolism diagnosis.
422. **Hospital Laboratory Practice (5).** Lab. 15. Pr., LT 301, LT 421.  
Practical applications of the principles, procedures, and techniques encountered in hospital laboratories.
423. **Advanced Hospital Laboratory Practice (5).** Lab. 15. Pr., LT 422.

### Library Science (LY)

101. **Use of the Library (1).** Taught by academic members of the Library staff.  
Lectures and assignments designed to facilitate use of the card catalog, periodical indexes, reference books, and the compilation of bibliographies.

**Mathematics (MH)***Head Professor Parker**Research Professor Ikenberry**Professors Ball, Burton, Butz, Macon, Perry, Williams**Associate Professors B. Fitzpatrick, P. Fitzpatrick, Haynsworth,**A. J. Robinson, Thompson**Research Assistant Professor Cook**Assistant Professors Baskerville, Calder, Darwin, C. E. Robinson**Instructors Alcord, Bass, Compere, Frady, M. Fitzpatrick,**Hartwig, Jones, Newman, Rautenstrauch, Salzmann, Tucker*

040. Remedial Algebra. Lec. 5. Non-credit.
060. Essentials of Plane and Solid Geometry. Lec. 5. Non-credit.  
A course for students who are deficient in high school geometry.
107. College Algebra (5). Pr., departmental approval.  
Credit is not allowed for both MH 107 and MH 111.
108. Mathematics of Finance (5). Pr., MH 107, MH 111, or MH 160.  
Simple annuities; general annuities; sinking funds; amortization schedules; depreciation; bonds.
- 111-12. Introductory College Mathematics (5-5). Pr., MH 060 (or H.S. equivalent).  
(Credit in MH 111 excludes credit in MH 107.)  
This sequence emphasizes mathematical ideas as well as mathematical manipulation in preparing students for MH 161, including material contained in standard college courses in algebra and trigonometry.
127. Elementary Mathematical Statistics (5). Pr., MH 107, MH 111 or MH 160.  
To develop elementary statistics based on a limited mathematical background. A study of the normal, binomial, Chi square and Poisson distributions with applications to various fields is included.
160. Introductory College Mathematics (5). Pr., MH 060 (or H.S. equivalent) departmental approval.  
To be taken in lieu of MH 111-12 by selected students.
161. Analytic Geometry and Calculus (5). Pr., MH 112 or MH 160. First quarter of a four-quarter sequence for technical students.
- 181-2. Fundamental Mathematics I, II (5-5). Pr., two quarters of college credit.  
Concepts underlying the techniques of arithmetic and algebra. (Previous credit for any college mathematics excludes credit for this course.)
- 262-3-4. Analytic Geometry-Calculus (5-5-5). Pr., MH 161.
331. Higher Algebra (5). Pr., MH 262.  
Properties of integral domains with special emphasis on the arithmetic of the integers and polynomials.
340. Elementary Topology of the Line and Plane (5). Pr., MH 262 or consent of instructor.  
Elementary set theory, the limit concept, basic topological properties of Euclidean spaces of one and two dimensions.
351. Finite Mathematics (5). Pr., five hours credit in mathematics and junior standing.  
Laws of logic, theory of sets, probability.
361. Differential Equations (5). Pr., MH 264.  
Ordinary differential equations with applications.
362. Engineering Mathematics I (5). Pr., MH 361.  
Fourier series, Laplace transforms, partial differential equations, special functions.
403. Engineering Mathematics II (5). Pr., MH 361; junior standing.  
Complex numbers, functions, mappings, residues, contour integration.
404. Engineering Mathematics III (5). Pr., MH 361; junior standing.  
Vector analysis, with applications.
420. Introduction to Analysis I (5). Pr., MH 264; junior standing.  
Algebraic and topological structures, sequences of numbers and functions, convergence theorems, continuity, differentiability.
421. Introduction to Analysis II (5). Pr., MH 420 or consent of instructor.  
Riemann-Stieltjes Integration, series, elementary functions.
422. Introduction to Analysis III (5). Pr., MH 421 or consent of instructor.  
Theory of functions relative to Euclidean spaces, including partial differentiation, multiple integrals.

428. **Linear Differential Systems (5).** Pr., MH 420 or consent of instructor; junior standing.  
Systems of linear ordinary differential equations, series solutions, approximate solutions.
431. **Introduction to Modern Algebra (5).** Pr., MH 331; junior standing.  
Integral domains, groups, rings, fields.
435. **Theory of Numbers I (5).** Pr., MH 331; junior standing.  
Theorems on divisibility; prime numbers; congruences; theorems of Fermat, Euler, and Wilson; power residues.
437. **Introduction to the Theory of Matrices (5).** Pr., MH 331 or consent of instructor; junior standing.  
Rectangular matrices and elementary transformations; equivalence of matrices and of forms, linear spaces; matrix polynomials.
443. **Solid Analytic Geometry (5).** Pr., MH 263; junior standing.  
Solid analytic geometry, non-Euclidean geometry.
444. **Analytic Projective Geometry (5).** Pr., MH 263; junior standing.  
Coordinates; transformations; conics; quadrics.
447. **Foundations of Plane Geometry (5).** Pr., MH 264 and junior standing.  
Axiomatic development of a plane geometry. Points, lines, congruences. Emphasis is placed on development of proofs by students.
460. **Numerical Analysis I (5).** Pr., MH 264; junior standing.  
Introduction to numerical analysis and computing with emphasis on methods of solution adaptable to electronic computing machinery. Credit for MH 407 precludes credit for this course.
461. **Numerical Analysis II (5).** Pr., MH 361 or MH 428, and MH 460; junior standing.  
Interpolation; systems of linear equations; numerical differentiation and integration; ordinary differential and difference equations.
467. **Mathematical Statistics I (5).** Pr., MH 263; junior standing.  
Data in distribution functions; theoretical distribution functions; moment generating function, normal, binomial, Poisson, Student "t," chi-square and "F" distribution functions; large-sample theory; linear and curvilinear correlation.
481. **College Geometry (5).** Pr., MH 262; junior standing.  
Classical Euclidean geometry; loci; indirect construction; the nine-point circle; homothetic figures. (Not for majors in science and mathematics.)
485. **Fundamentals of Algebra I (5).** Pr., MH 262; junior standing.  
The structure of the integers, factorization of the integers, congruent theory.
486. **Foundations of Geometry (5).** Pr., MH 262; junior standing.  
Euclidean and non-Euclidean geometries with emphasis given to their logical development from basic assumptions. Some attention given to the history of geometry.
487. **Fundamentals of Analysis (5).** Pr., MH 262; junior standing.  
A study of mathematical analysis with emphasis on basic principles and relationships. (Not for majors in science and mathematics.)

#### GRADUATE COURSES

- 601-2-3. **Celestial Mechanics I, II, III (5-5-5).** Pr., consent of instructor.  
Elliptic motion, series expansions in elliptic motion, potentials of attracting bodies, numerical integration and differential correction of orbits, lunar theory, theory of perturbations, Lagrange's method and introduction to canonical variables, the disturbing function, artificial satellite orbit theory.
- 607-8-9. **Applied Mathematics I, II, III (5-5-5).** Pr., approved graduate standing.  
Scalar, vector, and dyadic fields; equations governing fields; Helmholtz's and Laplace's equations in curvilinear coordinates; separation of variables; boundary conditions and eigenfunctions; Green's functions.
610. **Special Functions (5).** Pr., consent of instructor.
613. **Tensor Analysis (5).** Pr., consent of instructor.
- 620-21. **Functions of Real Variables I, II (5-5).** Pr., MH 422.  
Measure theory and Lebesgue Integration.
- 622-23. **Functions of a Complex Variable I, II (5-5).** Pr., MH 422.  
Complex numbers; analytic functions; derivatives, Cauchy integral theorem and formula; Taylor and Laurent series; analytic continuation; residues; maximum principle; Riemann surfaces; conformal mapping; families of analytic functions.
- 624-25-26. **Linear Topological Spaces I, II, III (5-5-5).** Pr., MH 422.  
Bounded linear transformations and linear functionals on Banach and Hilbert spaces, including conjugate spaces, adjoint operators, self adjoint operators, spectral theory, applications to particular spaces.

- 628-29. **Advanced Theory of Differential Equations (5-5).** Pr., MH 422.  
Existence, uniqueness and continuation theorems for ordinary and partial differential equations; nature of solutions. The first quarter will be devoted to ordinary equations, the second to partial differential equations.
- 631-32. **Modern Algebra I, II (5-5).** Pr., MH 431.  
Numbers; sets; groups; rings; fields of polynomials; Galois theory.
633. **Theory of Groups (5).** Pr., MH 631.  
Sylow theory, abelian groups, chain conditions.
634. **Theory of Rings (5).** Pr., MH 631.  
Structure of rings, ideals in commutative rings.
635. **Theory of Numbers II (5).** Pr., MH 435.  
Distribution of primes; Diophantine analysis; number lattices; selected topics from classical number theory.
637. **Matrices (5).** Pr., MH 437.  
Special types of Matrices; reduction to canonical form; readings in current literature.
- 640-41-42. **Functional Analysis (5-5-5).** Pr., MH 626 or consent of instructor.  
Topics in the advanced theory of linear functionals and operators on Banach and Hilbert spaces, chosen to lead students into research work in this field.
- 645-46. **Differential Geometry I, II (5-5).** Pr., MH 422.  
Tensor analysis; curves and surfaces in Euclidean space; introduction to Riemannian geometry of  $n$ -dimensions.
- 650-51-52. **General Topology (5-5-5).** Pr., consent of instructor.  
An axiomatic development of point-set topology; connectivity, compactness, separability, topological equivalence, well-ordering, inner limiting sets, Cartesian products.
653. **Dimension Theory (5).** Pr., consent of instructor.  
The topological study of dimension in separable metric spaces.
- 654-55. **Point Set Topology (5-5).** Pr., MH 652.  
Upper semi-continuous collections, indecomposable continua, metrization problems, other topics.
- 657-58. **Algebraic Topology (5-5).** Pr., consent of instructor.  
The fundamental group, homology groups, simplicial complexes, other topics.
661. **Advanced Numerical Analysis (5).** Pr., MH 461.  
Matrices and systems of linear equations; systems of ordinary differential equations; partial differential equations.
667. **Mathematical Statistics II (5).** Pr., MH 467.  
Multiple and partial correlation; small-sample theory; non-parametric methods; testing goodness of fit; testing statistical hypothesis; statistical design in experiments; sequential analysis.

NOTE: Courses 681 through 687 listed below are for Education majors and are not available to graduate students in science or mathematics.

681. **College Geometry II (5).** Pr., MH 481 or departmental approval.  
Selected advanced topics in Euclidean geometry.
683. **Number Systems (5).** Pr., approved graduate standing.  
Detailed construction of the number system with close attention paid to the logic employed. This course is intended to furnish the high school teacher with a thorough understanding of the number system and its role in high school algebra and analysis.
685. **Fundamentals of Algebra II (5).** Pr., approved graduate standing.  
Number fields, including the fields of rational, real and complex numbers; the algebra of polynomials over a field; factorization of polynomials; and theory of equations.
687. **Fundamentals of Analysis II (5).** Pr., MH 487.  
Continuation of MH 487 with the introduction of more sophisticated ideas, e.g., the completeness axiom, continuity and inverse functions.
691. **Directed Reading in Algebra.** (Credit to be arranged.) Pr., 10 hours of 600 courses in the area.
692. **Directed Reading in Analysis.** (Credit to be arranged.) Pr., 10 hours of 600 courses in the area.
693. **Directed Reading in Applied Mathematics.** (Credit to be arranged.) Pr., 10 hours of 600 courses in the area.
694. **Directed Reading in Geometry.** (Credit to be arranged.) Pr., 10 hours of 600 courses in the area.
695. **Directed Reading in Topology.** (Credit to be arranged.) Pr., 10 hours of 600 courses in the area.



696. Directed Reading in Matrix Theory. (Credit to be arranged.) Pr., 10 hours of 600 courses in the area.
697. Directed Reading in Numerical Analysis. (Credit to be arranged.) Pr., 10 hours of 600 courses in the area.
699. Research and Thesis. (Credit to be arranged.) May be taken more than one quarter.
799. Research and Dissertation. (Credit to be arranged.)

### Mechanical Engineering (ME)

*Head Professor Vestal*

*Professors Jones, Lawson, Maynor, Shaw, and Tanger*

*Associate Professors Barbin, Elizondo, Fluker, Jemian, Min, Scarborough, Smith, Vachon, and Ward*

*Assistant Professors Cooley, Reece, and Vance*

*Instructors Boykin and Orr*

202. Engineering Materials Science—Structure (3). Pr., CH 103, PS 201 or PS 205. Theories and structures of crystalline and amorphous materials. Bonding, crystal classes, phase equilibrium relationships, diffusion and phase transformations.
205. Applied Mechanics—Statics (4). Lec. 3, Lab. 2. Pr., PS 201, corequisite, MH 263. Resolution and composition of forces; equilibrium of force systems; friction, centroids; moments of inertia.
206. Engineering Materials Science—Properties (3). Pr., ME 202. Relationships between structure and properties and the effects of environment. Mechanical properties, plasticity of single and poly-crystals, and properties of composite materials.
301. Thermodynamics I (4). Lec. 3, Lab. 2. Pr., MH 263 and PS 202. (Excludes credit in ME 310.) Laws of thermodynamics; work, heat, and properties; relationships among properties; equations of state; simple processes and cycles.
302. Thermodynamics II (4). Lec. 3, Lab. 2. Pr., ME 301. Continuation of ME 301. Mixtures of gases and vapors; cycle analysis; vapor and gas power cycles; combustion engine processes; refrigeration; introduction to cryogenics.
306. Strength of Materials I (4). Lec. 3, Lab. 2. Pr., ME 205 and MH 263. Fundamentals of stress and strain; stress-strain relations; temperature effects, bar with axial force, thin wall cylinders; torsion; beams; columns.
307. Applied Mechanics—Dynamics (5). Pr., ME 205 and MH 263. Types and principles of motion; action of unbalanced force systems affecting the motion of rigid bodies.
308. ME Laboratory I (1). Lab. 3. Corequisite, ME 302. Mechanical laboratory experiments and reports.
309. Materials Testing Laboratory (1). Lab. 3. Pr., ME 306. Testing of engineering materials in tension, in compression, and for hardness.
310. Thermodynamics (5). Pr., MH 263 and PS 202. Gases and vapors, cycles, mass and heat transfer. (For non-Mechanical Engineering students only.) (Credit in ME 310 excludes credit in ME 301 and 302.)
311. ME Laboratory II (1). Lab. 3. Pr., ME 302 and ME 308. Mechanical Engineering Laboratory experiments and reports.
316. Strength of Materials II (4). Pr., ME 306. Continuation of ME 306. Thick walled cylinders; curved beams; introduction to stability; theories of failure; energy.
319. Elementary Heat Power (5). Pr., CH 104, PS 205, MH 262. Introduction to power plant equipment, fuels and combustion, spark ignition and compression ignition engines, steam and gas cycles. (For non-Mechanical Engineering students only.)
321. Dynamics of a Particle (4). Lec. 3, Lab. 2. Pr., ME 205 and MH 263. Motion of a particle; Newtonian potential; force, mass, and acceleration for plane and three-dimensional motion.
322. Dynamics of Systems of Particles (4). Lec. 3, Lab. 2. Pr., ME 321. Relative motion; force, mass, and acceleration of rigid bodies; work and energy; impulse and momentum; conservation of linear and angular momentum.

323. **Dynamics of Machines (4).** Lec. 3, Lab. 3. Pr., ME 306 and ME 322.  
Angular and linear velocities and accelerations in machines; acceleration stresses in machine parts; balancing of slider crank mechanisms; crankshaft balancing; critical speeds of variable cross-section shafting; kinematics of gearing and the determination of gear forces.
324. **Fluid Mechanics I (4).** Lec. 3, Lab. 2. Pr., ME 322, and ME 301 or ME 310.  
Definitions and concepts; fluid statics; conservation of mass, momentum and energy; viscosity and its effects.
325. **Fluid Mechanics II (4).** Pr., ME 324; Coreq., ME 302.  
Continuation of ME 324. Dimensional analysis; model testing; potential theory; compressible flow; applications to turbomachines.
335. **Engineering Materials Science—Physical Metallurgy (4).** Lec. 3, Lab. 3. Pr., ME 206, Coreq., ME 306.  
Relationship between structure and properties of metals. Melting and solidification, crystal structure, dislocation and imperfection theories, alloying, deformation, and transformations.
410. **Power Systems (4).** Pr., ME 302 and senior standing.  
Theory, design, performance and applications of power systems.
411. **ME Laboratory III (2).** Lec. 1, Lab. 3. Pr., ME 311 and ME 412.  
Advanced experiments in ME Laboratory and reports.
412. **Combustion Engine Systems (4).** Pr., ME 302, ME 323, ME 325, ME 421 and junior standing.  
Design and development of power systems including reciprocating, electric, nuclear, and turbine types; liquid and solid propellant systems.
414. **Turbomachines (4).** Pr., ME 324 or CE 308, junior standing.  
Applications of fluid mechanics to turbomachines, such as pumps, turbines, and fluid couplings; control devices.
421. **Heat Transfer (4).** Pr., ME 301, ME 324 or AE 301, EE 372, MH 362, and junior standing.  
Fundamental principles of heat transfer by steady and unsteady conduction, thermal and luminous radiation, boiling and condensation, free and forced convection.
424. **ME Laboratory IV (2).** Lec. 1, Lab. 3. Pr., ME 311 and ME 410.  
Advanced experiments in ME Laboratory and reports. (No graduate credit permitted for M.M.E.)
425. **Gas and Steam Turbines (4).** Pr., ME 302 and senior standing.  
Thermodynamic theory and design of nozzles and blade paths for gas and steam turbines.
426. **Steam Turbines (4).** Pr., ME 302 and senior standing.  
Thermodynamic theory and design of steam turbines.
427. **Mechanical Vibrations (4).** Pr., ME 306, ME 322, and junior standing. Corequisite MH 362.  
Theory of vibration of systems of one or more degrees of freedom, with and without damping; systems with distributed constants and self-induced vibration.
428. **Air Conditioning and Refrigeration (4).** Pr., ME 302 or ME 310 and junior standing.  
Theory and design of heating, cooling and ventilating systems, and refrigeration systems, including cryogenics.
429. **Power Plant Design (4).** Pr., ME 410 and junior standing.  
Design problems and layout of a power plant.
430. **Internal Combustion Engine Problems (4).** Pr., ME 302, ME 412.  
Application of internal combustion engine theory to the design of engines.
432. **Automatic Controls (4).** Pr., MH 361, ME 322, ME 324, EE 362, and junior standing.  
Process analysis; methods of control; closed loop in control; feedback systems; analysis of system problems.
434. **Fluid Mechanics and Heat Transfer (5).** Pr., ME 310 and junior standing.  
The mechanics of compressible and incompressible fluids and the transmission of heat by conduction, convection, and radiation. (For non-Mechanical Engineering students only.)
436. **Engineering Materials Science—Ferrous Metallurgy (4).** Lec. 3, Lab. 3. Pr., ME 335 and junior standing.  
Design of ferrous metals following modern theory and practice. Hardenability, alloying, deformation, and special purpose steels.
437. **Engineering Materials Science—Nonferrous Metallurgy (4).** Lec. 3, Lab. 3. Pr., ME 335 and junior standing.  
Design of nonferrous metals following modern theory and practice. Aluminum and copper-beryllium systems, corrosion resistant alloys, refractory metals, strengthening mechanisms, spacecraft environments.

438. **Residual Stresses in Metals (4).** Pr., ME 335, and junior standing.  
Production and measurement of residual stresses in metals; relation of residual stresses to fatigue; consideration of fatigue in design.
439. **Machine Design I (4).** Lec. 3, Lab. 3. Pr., ME 206, ME 306, ME 323.  
Design of machine elements for static and dynamic stresses with the emphasis on synthesis and creative design.
440. **Machine Design II (4).** Lec. 3, Lab. 3. Pr., ME 439, ME 316.  
Continuation of ME 439, considering more advanced topics and the design of complete machines.
441. **Engineering Systems I (4).** Lec. 3, Lab. 3. Pr., senior standing and approval of Department Head.  
Typical problems requiring the development of skill in the use of analysis, synthesis and creativeness to design, evaluate, and optimize engineering systems.
442. **Engineering Systems II (4).** Lec. 3, Lab. 3. Pr., ME 441.  
A continuation of ME 441.
450. **Special Problems. (Credit 1-5).** Pr., Department Head approval, junior standing.  
Individual student endeavor under staff supervision involving special problems of an advanced nature.
451. **Advanced Projects (3).** Lec. 1, Lab. 6. Pr., ME 421, ME 316, ME 325, ME 323, and senior standing.  
Individual projects of a current nature, involving both analysis and synthesis, culminating in a formal report.

## GRADUATE COURSES

600. **Fluid Dynamics (3).** Pr., MH 404 and graduate standing.  
Navier-Stokes Equations. Exact and approximate solutions. Euler's equations. Continuity. Energy equations. Irrotational flow. Crocco's theorem. Creeping flow. Turbulence and Reynolds' Equations.
601. **Boundary Layer Theory (3).** Pr., ME 600 or CE 612.  
Hydrodynamic, thermal, mass and magnetic boundary layers. Prandtl's equations. Momentum equations. Energy equations.
602. **Gas Dynamics (3).** Pr., ME 600 or CE 612.  
Compressible flow equations. Isentropic flow. Fanno line flow. Rayleigh line flow. Shock waves. High speed flow. Internal and external flows. Forces on immersed bodies.
603. **Fluid Machines (3).** Pr., ME 602.  
Similarity considerations. Cavitation. Cascade theory. Axial and radial flow machines.
604. **Advanced Thermodynamics I (3).** Pr., ME 302 and graduate standing.  
First and second laws of thermodynamics, Carnot cycle and Kelvin temperature scale and applications.
605. **Advanced Thermodynamics II (3).** Pr., ME 604.  
Chemical thermodynamics, physics of low temperatures, thermodynamics of fluid flow and rocket systems.
606. **Propulsion Systems (4).** Pr., departmental approval.  
Chemical systems including liquid and solid rocket engines; thermionic engines and ionic propulsion; plasma and nuclear propulsion systems.
607. **Energy Conversion Systems (3).** Pr., ME 410 or departmental approval.  
Electromechanical energy conversion; thermoelectricity; thermionic converters; Photovoltaic conversion; magnetohydrodynamic generators; fuel cells.
612. **Engineering Analysis (3).** Pr., departmental approval.  
Equilibrium, eigenvalue, and propagation problems for continuous systems. Physical laws and mathematical properties discussed with considerable emphasis on numerical solutions.
615. **Experimental Research Methods (3).** Pr., departmental approval.  
Numerical methods and data processing, mathematical statistics and probability, analysis of experimental data, errors of measurement, and instrumentation.
620. **Heat Transmission—Conduction (3).** Pr., ME 421.  
Fourier's general equation, influence of heat sources and sinks, analog and numerical methods of solving heat transfer problems, heat transfer from extended surfaces, transient heat transfer with steady and unsteady boundary conditions.
621. **Heat Transmission—Convection (3).** Pr., ME 421.  
General problems of convection, forced convection heat transfer, free convection, thermodynamic boundary layers, condensing and boiling, heat transfer to liquid metals and analysis of heat exchangers.
622. **Heat Transmission—Radiation (3).** Pr., ME 421.  
Fundamental laws of radiation, net radiation methods, configuration factors, radiation through absorbing media, solar terrestrial and celestial radiation, and thermometry and temperature control.

630. **Advanced Strength of Materials (3).** Pr., ME 316, MH 361, or departmental approval.  
Selected topics in strength of materials. Beam on elastic foundation, graphical representations of three dimensional stress state, bending of curved bars, theories of failure.
631. **Theory of Elasticity I (3).** Pr., departmental approval.  
Three dimensional theory of stress and strain for small deformations. Applications to problems of plane stress and plain strain. Solutions by Airy Stress function and Kolosov-Muskhelishvili methods.
632. **Theory of Elasticity II (3).** Pr., ME 631.  
Selected topics in three dimensional problems. Torsion of bars, bending of prismatic bars, thermal stresses, introduction to the general (non-linear) theory of elasticity.
633. **Experimental Stress Analysis (3).** Pr., ME 316 or departmental approval.  
Relationship between strains and stresses. Use is made of modern experimental stress analysis techniques such as electric resistance strain gages, photoelasticity, brittle coatings, and photostress.
634. **Elastic Stability (3).** Pr., ME 631, CE 633, or departmental approval.  
Buckling failure of columns by bending, twisting or shear; lateral buckling of beams; shear buckling; buckling of thin plates and shells. Applications to problems.
635. **Intermediate Dynamics (3).** Pr., ME 325, MH 361.  
Dynamics of particles and systems of particles applied to engineering problems. Work and energy, and impulse and momentum principles. LaGrange's equations and Hamilton's principle.
636. **Non-Linear Oscillations (3).** Pr., ME 325, ME 427, or departmental approval.  
Free, forced, and self-excited oscillations in mechanical systems. Relaxation oscillations, response curves and stability considerations.
637. **Theory of Plates (3).** Pr., departmental approval.  
Analysis of stress, strain, and deformation of plates under applied transverse loads. Applications to plates of different geometries with various boundary conditions.
638. **Theory of Shells (3).** Pr., departmental approval.  
Analysis of stress, strain and deformation of shells under applied loads.
660. **Metallurgy of the Solid State (3).** Pr., departmental approval.  
Basic principles relating to the behavior of materials. Ultimate structure of matter, crystalline structures, thermodynamic stability and reaction kinetics are discussed along with bonding, dislocations, polycrystalline structures, mechanical and thermal properties, electronic conduction, semi-conduction, and insulation. Considerable emphasis on application to real problems, predominantly of the engineering type.
661. **Metallurgy of Corrosion (3).** Pr., departmental approval.  
Nature and mechanism of corrosion. Effect of manufacturing methods including heat treatment. Effect of environment. Corrosion types and methods of corrosion prevention.
662. **Performance of Metals at Elevated Temperatures (3).** Pr., departmental approval.  
Fundamental behavior of metals at elevated temperatures. Commercial and experimental types of ferrous and non-ferrous alloys and their suitability for elevated temperature applications. Major emphasis is placed on correlation of theory and experiment, particularly as this relates to the application of dislocation theory to creep, fatigue, and other manifestations of plastic deformation associated with elevated temperature environments.
663. **Science of Foundry Operations (3).** Pr., departmental approval.  
Fundamental principles are developed and related specifically to the founding of metals. Free energy, the equilibrium constant, and activity are considered along with heat transfer in the unsteady state, direction of reaction, and rate of reaction. Properties associated with cast and wrought conditions, respectively, are contrasted and evaluated.
664. **Origin and Criteria of Metal Failures (3).** Pr., departmental approval.  
Defects occurring as a result of primary and subsequent processing operations are presented in the light of their effect on service life. Interpretation of evidence of deterioration and prolongation of service life are considered along with methods of minimizing failure. Considerable emphasis is given to what constitutes failure and relative significance of failure.
665. **Phase Diagrams of Metal Systems (3).** Pr., departmental approval.  
Methods of representing and interpreting phase equilibria. Binary and multicomponent systems. Simpler temperature-composition systems and more complex temperature-pressure-composition systems. Major emphasis on applications. Minor emphasis on phase diagram determination and thermodynamics.
690. **Seminar (credit to be arranged).** May be taken more than one quarter.
691. **Directed Reading in Mechanical Engineering (credit to be arranged).** May be taken more than one quarter.

699. Research and Thesis (credit to be arranged). May be taken more than one quarter.
799. Research and Dissertation (credit to be arranged). May be taken more than one quarter.

### **Military Science (MS)**

#### **Program of Instruction**

#### **BASIC COURSE**

##### **First Year (Freshman)**

##### **Military Science I**

101. Organization of the Army and ROTC; United States Army and National Security; Individual Weapons and Marksmanship; Leadership Laboratory (1). Lec. 3, Drill 2.
102. Leadership Laboratory (1). Drill 2.
103. Leadership Laboratory (1). Drill 2.

##### **Second Year (Sophomore)**

Military Science II (Pr., MS I or as determined by the Professor of Military Science).

201. American Military History (1). Lec. 2, Drill 2.  
A survey from the origins of the American Army to the present with emphasis on factors which led to the organizational, tactical, logistical, operational, strategic, social, and similar patterns found in our present day Army.
202. Map and Aerial Photograph Reading (1). Lec. 2, Drill 2.  
Includes application of basic principles, emphasizing terrain appreciation and evaluation; marginal information; military and topographic map symbols; orientation; intersection; resection; military grid reference system; classes of aerial photography and elementary aerial photography reading.
203. Introduction to Operations and Basic Tactics (1). Lec. 2, Drill 2.  
Includes instruction in the basic military team; combat formations and patrolling; field fortification and camouflage, cover and concealment; technique of fire and principles of offensive and defensive combat.

#### **ADVANCED COURSE**

##### **Third Year (Junior)**

Military Science III (Pr., all MS I and MS II or equivalent as determined by Professor of Military Science).

301. Military Teaching Principles and Leadership (3). Lec. 4, Drill 2.  
Educational psychology as pertains to five stages of instructional technique; responsibilities and basic qualities of a leader; leadership principles, traits and techniques.
302. Branches of the Army and Communications (3). Lec. 4, Drill 2.  
Familiarization with all branches of the Army so that a cadet may select the branch in which he wishes to be commissioned; principles and methods of communications.
303. Small Unit Tactics (3). Lec. 4, Drill 2.  
Infantry organization; principles of offensive and defensive combat; guerrilla warfare.

##### **Fourth Year (Senior)**

Military Science IV (Pr., MS III or as determined by the Professor of Military Science).

401. Operations (3). Lec. 4, Drill 2.  
Origin and purpose of staff; relationship between commanders and their staffs.
402. Logistics and Army Administration (3). Lec. 4, Drill 2.  
Functioning of staffs; mission of supply, supply doctrine and principles; classes of supply; familiarization with Army publications, forms, records, reports and administrative system.
403. Military Law, Role of US in World Affairs and Service Orientation (3). Lec. 4, Drill 2.  
Functioning of military law system; relation of military law to civil law; types of conflict, inter-relationship of elements of national power; customs of the service; code of conduct, responsibilities and obligations of an officer.

**Music (MU)***Head Professor Liverman**Professors Glyde, Hinton, and Tamblin**Associate Professor Bentley**Assistant Professors Richardson, Rosenbaum, Stevens, R. Stycos, and Walls**Instructors Hargett\* and Robertson\**

- 131-32-33. Music Theory I-II-III (3-3-3).** Pr., MU 102 or by permission.  
Integrated course in the development of listening, performing, and writing techniques, elementary diction, analysis, music reading, and diatonic harmony.
- 151-52-53. Survey of Music Literature (1-1-1).** Lec. and Lab. 3-3-3.  
Presentation of vocal solo and choral, keyboard and chamber music, acquainting the student with musical compositions and composers with emphasis on music literature of the past three centuries.
- 231-32-33. Music Theory IV-V-VI (3-3-3).** Pr., MU 133.  
Continuation of composite theory through chromatic harmony; analysis of larger forms; continued music reading and keyboard harmony.
- 251-52-53. Survey of Music Literature (1-1-1).** Lec. and Lab. 3-3-3.  
Presentation of instrumental solo, opera and symphonic music, acquainting the student with musical compositions and composers with emphasis on music literature of the past three centuries.
- 254. Music Literature for Music Education Majors (3).**  
Survey of choral and instrumental literature. (This course excludes credit for MU 151-52-53, 251-52-53 Survey of Music Literature.)
- 331-32-33. Modern Harmony I-II-III (3-3-3).** Pr., MU 233.  
Twentieth-century harmonic devices. An integrated approach to understanding contemporary writing, with emphasis on original work and analysis of the principal departments from "traditional" harmony.
- 334-35-36. Counterpoint I-II-III (3-3-3).** Pr., MU 233.  
I. Strict Counterpoint. Counterpoint in 5 species in 2 or 3 voices concluding with invertible counterpoint. II. Tonal counterpoint. Contrapuntal devices of the 18th Century including double counterpoint and imitation. III. Invention and Fugue. The study and writing of 2 part inventions, canonic treatment, and the 3 voice fugue.
- 351-52-53. Music History I-II-III (3-3-3).**  
Development of music from early times to the present day. Lectures, recorded examples, readings.
- 361-62-63. Conducting I-II-III (3-1-1).** Pr., MU 133.  
I. Elementary basic baton techniques and introduction to score reading. II. Choral conducting. Elementary course in choral score reading and conducting choir and glee clubs. III. Instrumental conducting. Elementary course in instrumental score reading and conducting band, orchestra and instrumental ensembles.
- 409. Marching Band Techniques (5).**  
Fundamental methods and procedures of the Marching Band.
- 411-12-13. Tuning and Repairing Pianos (1-1-1).** Lab. 3-3-3. Pr., senior standing.  
Basic principles of piano tuning such as tuning unisons, octaves, setting temperaments, etc., simple action and damper repair, action regulating and the replacing of strings and worn-out parts which can normally be done by the music instructor.
- 414. Care and Repair of Musical Instruments (1).** Lec. I, Lab. 3. Pr., senior standing.  
Selection, care and repair of woodwind, brass and string instruments with emphasis on adjustments which should be made by the instrumental director.
- 417-18-19. Mechanics of the Organ (1-1-1).** Lab. 3-3-3.  
Organ construction including inspection of various types of organs with a view to preparing the organist to make minor repairs and adjustments.
- 431-32-33. Music Analysis (3-3-3).** Pr., senior standing.  
Harmonic and structural analysis of smaller instrumental forms; harmonic and structural analysis of the larger polyphonic and homophonic forms.
- 434-35-36. Music Composition I-II-III (3-3-3).** Pr., MU 233.  
Analysis, study, and writing of musical compositions in small, compound, and larger musical forms with emphasis on both stylistic and individual creative writing.
- 437-38-39. Orchestration I-II-II (3-3-3).** Pr., MU 233.  
Ranges, notation, and characteristics of orchestral instruments. Exercises in arranging for combinations of string and wind instruments. Theory and practice of orchestration for full orchestra.

\* Temporary.



441. **Piano Pedagogy (3).**  
For prospective piano teachers. Study of teaching methods for beginners and succeeding levels. Classification and analysis of teaching repertoire.
442. **Vocal Pedagogy (3).**  
For prospective voice teachers. An intensive study of the materials and methods of voice training. Classification and analysis of teaching repertoire.
443. **String Pedagogy (3).**  
Mechanics of stringed instruments. Teaching methods, schools, and systems. Teaching literature and repertoire.
444. **Instrumental Pedagogy (3).**  
Mechanics of brass or woodwind instruments. Teaching methods and repertoire with emphasis on solo instrumental literature.
445. **Theory Pedagogy (3).**  
Required of seniors majoring in theory and composition. Designed to present the problems of sight-singing, rhythmic dictation, melodic and harmonic dictation, and part writing from a pedagogical viewpoint. Intensive review of harmony and dictation, together with a survey of several of the most commonly used texts.
451. **Keyboard Literature (3). Pr., junior standing.**  
Masterworks of the clavichord, harpsichord, organ, and piano literature from the Baroque period to the present.
452. **Vocal Literature (3). Pr., junior standing.**  
Vocal literature from Elizabethan time to the present, including representative European and American repertoire.
453. **Choral Literature (3). Pr., junior standing.**  
Chronological study of choral music from the Middle Ages to the present including opera, and oratorio with detailed examination of representative works.
454. **Instrumental Literature (3).**  
Analysis and study of orchestral scores and parts from the classic, romantic and modern literature.

### General Elective Courses

371. **Introduction to Music (3). No credit allowed to Music Majors and Minors.**  
Introductory course in the understanding of music including an explanation of basic terms, notations, rhythm, tonal system, vocal and piano score reading.
372. **Music in the Western Civilization (3). May not be taken for credit by Music Majors or Minors.**  
Music as related to the philosophical, economical and social growth of our culture from the Roman Empire to the 20th Century.
373. **Appreciation of Music (3). May not be taken for credit by Music Majors or Minors.**  
Outstanding composers and compositions. No previous music training required; an orientation in the art of listening.
374. **Masterpieces of Music (3). May not be taken for credit by Music Majors or Minors.**  
Representative musical works of each great period of musical history. No previous music training required.
375. **History of Jazz (3). May not be taken for credit by Music Majors or Minors.**  
The origin, development and styles of jazz music; people important in the development of American jazz music.
376. **Music for Ballet and Theatre (3). May not be taken for credit by Music Majors and Minors.**  
Outstanding musical scores in the field of ballet and the theatre with special emphasis on the modern American musical theatre.
377. **Music Arranging (3). By permission.**  
Project course in arranging various combinations from quartet to symphonic band, and arranging for solo and choral groups.

### Group Performance Courses\*

#### 121-22-23. Glee Club (1 hour credit per quarter).

MEN'S GLEE CLUB and WOMEN'S GLEE CLUB are study and performing groups open to any Auburn student. No previous experience in group singing is required. (May be taken with or without credit.)

\* With the Dean's approval maximum credit permitted for regular college students in Group Performance Courses is 6 quarter hours; for Music Majors, 12 quarter hours.

**221-22-23. Mixed Chorus (1 hour credit per quarter).**

MIXED CHORUS is open to any Auburn student. No previous experience in group singing is required. Annually performs Handel's "Messiah," and other large choral compositions. (May be taken with or without credit.)

**321-22-23. Concert Choir (1 hour credit per quarter).**

CONCERT CHOIR is a small mixed chorus for study and performance of serious choral literature; open to any Auburn student by audition only. (May be taken with or without credit.)

**124-25-26. Concert Band (1 hour credit per quarter).**

Members of the Band are selected during the first week of each quarter. A minimum of 5 rehearsal hours per week is required, with extra rehearsals scheduled as necessary. Band members are required to be present at all rehearsals and all public performances. The Concert Band is expected to perform at two campus programs and one concert tour each year, and may be called upon to serve as a marching organization for various public parades. (May be taken with or without credit.)

**127-28-29. Orchestra (1 hour credit per quarter).**

Members of the symphonic orchestra are selected by try-outs during the first week of each quarter. (May be taken with or without credit.)

**224-25-26. Marching Band (1 hour credit per quarter).**

Provides music for athletic contests and half-time shows at football games, various parades, pep rallies, and other campus and off-campus events. During the fall quarter, will rehearse a minimum of 9 hours per week. Physical Education may be waived for members of the Marching Band. (See Band Director for details.) (May be taken with or without credit.)

**227-28-29. Opera Workshop (1 hour credit per quarter).**

Open to all students interested in opera, including performance, stage-craft, make-up, conducting, and coaching. A minimum of three hours per week rehearsal or stage-craft is required with extra time scheduled as necessary. (May be taken with or without credit.)

**324-25-26. Music Ensemble (1 hour credit per quarter). (By permission.)**

Primarily for advanced musicians for the study and performance of musical compositions for small instrumental and vocal groups. A minimum rehearsal of three hours per week required. (May be taken with or without credit.)

**327-28-29. Piano Ensemble (1-1-1). Lab. 3-3-3.**

Study through performance of original compositions and transcriptions for piano-four-hands and two pianos using two to four players.

## Applied Music\*\*

### Piano

**081-82-83. Elementary Piano (No credit).**

General keyboard facility, sight reading of folk tunes and easier classics; repertory of simple piano material; harmonization and transposition of folk tunes and familiar songs; elementary improvisation.

**181-82-83. Intermediate Piano (1, 2, or 3 hrs. per quarter). Pr., MU 043 or 105.**

Individual instruction in piano. The student is trained in correct touch and reliable technique, by playing correctly all major and minor scales in moderately rapid tempo, broken chords in octave positions in all keys by establishing systematic methods of practice and by performing.

**281-82-83. College Piano I (1, 2, or 3 hrs. per quarter). Pr., acceptable playing of works from MU 143.**

Bach, French Suites, and Two-part Inventions; Czerny, Studies; Beethoven, Sonatas in grade of difficulty to Op. 14 No. 1; Romantic and Contemporary pieces.

**381-82-83. College Piano II (1, 2, or 3 hrs. per quarter). Pr., acceptable playing of works from MU 243.**

Bach, Well Tempered Clavichord, Three-part Inventions; Czerny, Studies, Op. 740; Beethoven, Sonatas in grade of difficulty to Op. 2, No. 1; Romantic and Contemporary pieces.

**481-82-83. Advanced College Piano (1, 2, or 3 hrs. per quarter). Pr., acceptable playing of works from MU 343.**

Bach, Well Tempered Clavichord; Chopin, Etudes; Brahms, Schumann, and more advanced work in Romantic and Contemporary composers.

### Voice

**084-85-86. Elementary Voice (No credit).**

First principles of voice production, diction and singing; song material for development toward performance. Exercises for voicing and facility; correct posture and breathing.

\*\* Only MU majors in Bachelor of Arts or Bachelor of Music curricula may receive more than 1 hour credit per quarter for each applied music course.

**184-85-86. Intermediate Voice (1, 2, or 3 hrs. per quarter). Pr., MU 046 or 108.**

Individual instruction in singing. The student is trained to sing on pitch with correct phrasing and musical intelligence standard songs in good English (the simplest classics are recommended). The singing of simple songs at sight is stressed. Some knowledge of piano is urgently recommended.

**284-85-86. Voice I (1, 2, or 3 hrs. per quarter). Pr., acceptable singing of songs from MU 146.**

Study of tone production, vocal resonance and mastery of correct breathing, vowels and consonants in their relation to the singing and speaking voice; vocalises and arpeggios; songs of moderate difficulty in correct intonation and interpretation. Italian classics recommended.

**384-85-86. Voice II (1, 2, or 3 hrs. per quarter). Pr., acceptable singing of songs from MU 246.**

Continuation of the study of voice production, drill in diction and phrasing. French, German or Italian art songs. Contemporary American composers. Oratorio or Opera Arias.

**484-85-86. Advanced Voice (1, 2, or 3 hrs. per quarter). Pr., acceptable singing of works from MU 346.**

Song literature, including the works of Brahms, Schumann, Wolf, Schubert, and French masters. Concentration of perfecting vocal techniques on performer's level.

**Organ****087-88-89. Elementary Organ (No credit).**

Introduction to organ playing; Jennings, *First Elements of Organ Technics*. Studies for manuals and pedals. The technique of hymn-playing, Telemann, Choral Preludes.

**187-88-89. Intermediate Organ (1, 2, or 3 hrs. per quarter). Pr., MU 049 or equivalent.**

Technical studies for manuals and pedals. Elementary improvisation. Transcription at sight from simple piano accompaniments. Bach, short Preludes and Fugues (E Minor, G Minor); Choral Preludes for manuals.

**287-88-89. College Organ I (1, 2, or 3 hrs. per quarter). Pr., MU 149 or equivalent.**

Continued improvisation and technical studies. Principles of modulation. Bach, short Preludes and Fugues, Choral Preludes from "The Liturgical Year." Reger, Choral Preludes.

**387-88-89. College Organ II (1, 2, or 3 hrs. per quarter). Pr., MU 249.**

Technical equipment for organ works of more than medium difficulty. Bach, Choral Preludes, Prelude and Fugue in E Minor, Fugue in G Minor; Mendelssohn, Second Sonata, Franck; Prelude, Fugue and Variations. Selected works by Buxtehude, Liszt, Rheinberger, Karg-Elert, Guilmant and others.

**487-88-89. Advanced Organ (1, 2, or 3 hrs. per quarter). Pr., MU 349.**

Senior course embracing the more difficult organ literature, such as the larger works of Bach; Mendelssohn, Preludes and Fugues, and Sonatas; Franck, Choral, Organ Symphonies by Widor and Vierne. Modern compositions and shorter recital pieces.

**Instrumental****Strings****091-92-93. Elementary Strings (No credit).**

Rudiments of producing tone, bowing, fingering and scales in one octave, as found in the first position. Simple pieces and studies.

**191-92-93. Intermediate Strings (1, 2, or 3 hrs. per quarter). Pr., MU 093.**

Individual instruction in playing a selected instrument in strings. The student is trained in technical facility in major and minor scales, and arpeggios in all scales, and in simple solo works. For violin, such pieces will be of the difficulty of: Kreutzer Etudes, No. 1-32; the Viotti Concerto, No. 23; the deBeriot Concerti, No. 7 and 9; and the Tartini G minor Sonata. For other string instruments, pieces of a comparable level will be selected.

**291-92-93. Strings I (1, 2, or 3 hrs. per quarter).**

Mastery of techniques for scales and broken chords in three octaves. Continued study in solo playing. Violin etudes; Kreutzer, Fiorillo, Mazas. Pieces of medium difficulty; Mozart, Handel and Schubert sonatas. Concerti: Vivaldi, A minor, Viotti No. 22, Mozart M major, deBeriot Nos. 7 and 9.

**391-92-93. Strings II (1, 2, or 3 hrs. per quarter).**

Scales and broken chords at increased tempo, double stops. Etudes: Shode, Rovelli, Wieniawski. The easier Bach sonatas for violin and piano; Spohr concerti No. 2, 6, 9. All students should give evidence of ability to read at sight compositions of moderate difficulty, and should demonstrate ability in ensembles, and symphonic works.

**491-92-93. Advanced Strings (1, 2, or 3 hrs. per quarter).**

Virtuoso instrumental literature. Etudes: Wieniawski, Locatelli caprices. Bach solo sonatas, Paganini caprices. Concerti: Mendelssohn, Lalo, St. Saens.

## Woodwind

**094-95-96. Elementary Woodwind (No credit).**

Tone production, fingering and scales in simple keys.

**194-95-96. Intermediate Woodwind (1, 2, or 3 hrs. per quarter).**

Training in facility and control of intonation, embouchure, phrasing and control.

**294-95-96. College Woodwind I (1, 2, or 3 hrs. per quarter).**

Continued study for students who have had foundational training. The student finishing this course should be able to play 1st chair parts in school bands or 2nd chair parts in school symphonies. Studies: Klose, Book I for clarinets; Nieman-Labate for Oboe; Pares for Flute and Weissenborn (1st half) for Bassoon.

**394-95-96. College Woodwind II (1, 2, or 3 hrs. per quarter).**

Further study in technical methods outlined above. Special stress on expression, and interpretation; solo passages from standard symphonic work.

**494-95-96. Advanced Woodwind (1, 2, or 3 hrs. per quarter).**

Advanced study with special emphasis on training in outstanding pieces of literature; designed to prepare the student for his major Senior Recital, as well as the mastery of his instrument.

## Brass

**097-98-99. Elementary Brass (No credit).**

Fundamentals of tone production, fingering, and reading music.

**197-98-99. Intermediate Brass (1, 2, or 3 hrs. per quarter).**

Development of tone production and special techniques of the individual instrument; including scale and chord work in all major keys.

**297-98-99. College Brass I (1, 2, or 3 hrs. per quarter).**

Scales and chord work in all keys, technique exercises of medium difficulty, and some work in easy literature.

**397-98-99. College Brass II (1, 2, or 3 hrs. per quarter).**

Continuing techniques study involving difficult etude study, flexibility exercises, and difficult scale and chord work in all keys. Literature study of medium and medium difficult works written by the master composers.

**497-98-99. Advanced Brass (1, 2, or 3 hrs. per quarter).**

Continuing literature study involving the most difficult of the great works for the instrument; development of a high degree of musicianship to prepare the student for public performance.

Courses in Applied Music are open to any student of the institution upon permission of the head of the department. Courses may be taken with or without academic credit. Admission to courses on the 200, 300, and 400 levels will be granted only after the student has demonstrated fulfillment of the prerequisite by passing satisfactorily a performance test based on typical exercises and compositions selected from the preceding course.

Since achievement in music is cumulative, it will normally take three quarters of study to meet the requirements for each successive grade of execution. These requirements conform to standards established by the National Association of Schools of Music.

Each course in Applied Music with an individual instructor is based on one half-hour lesson per week for the academic quarter. Many students, however, desire two half-hour lessons per week. Such an arrangement is advantageous to the student and can be made, but it does not carry additional credit.

The amount of credit in Applied Music is based on the following practice schedule:

- 1 cr. hr.—4 hours weekly practice
- 2 cr. hrs.—8 hours weekly practice
- 3 cr. hrs.—12 hours weekly practice

Only MU students in the BA or BM degree curricula may receive more than 1 hour credit per quarter for each applied music course.

## Applied Music Fees (Per Quarter)

One half-hour lesson per week	\$20.00
Two half-hour lessons per week	30.00
Class instruction in piano, etc.	5.00
Use of practice room, one hour per day	3.00
Use of practice room, two hours per day	5.00
Instrumental rental	3.00

### Class Instruction in Applied Music

The Music Department offers a number of classes in Applied Music open to Music Majors and Minors and to regularly registered college students who have had previous music training. These classes meet two hours per week and carry one hour credit. Tuition fee \$5.00. (Minimum of 12 students per class.)

**101-2-3. Organ Class (1-1-1). (2-2-2 lec. and lab.).**

Class instruction and practice in the rudiments of music as applied to organ playing.

**104-5-6. Piano Class (1-1-1). (2-2-2 lec. and lab.).**

Class instruction and practice in the rudiments of music as applied to piano playing. (See above for fee.)

**107-8-9. Voice Class (1-1-1). (2-2-2 lec. and lab.).**

Class instruction and practice in the rudiments of music as applied to voice. (See above for fee.)

**110-11-12. String Instruments Class (1-1-1). (2-2-2 lec. and lab.).**

Class instruction and practice in the rudiments of music as applied to violin, viola, cello and contrabass playing. (See above for fee.)

**113-14-15. Brass Instruments Class (1-1-1). (2-2-2 lec. and lab.).**

Class instruction and practice in the rudiments of music as applied to playing on trumpet, trombone and other brass instruments. (See above for fee.)

**116-17-18. Woodwind Instruments Class (1-1-1). (2-2-2 lec. and lab.).**

Class instruction and practice in the rudiments of music as applied to playing on clarinet, oboe, bassoon, flute and other woodwind instruments. (See above for fee.)

**119. Percussion Instruments Class (1). (2 labs.)**

Class instruction and practice in the rudiments of music as applied to playing percussion instruments: drums, bells, cymbals, triangles, tympani, etc. (See above for fee.)

### GRADUATE COURSES

**600. Music in the Culture (5).**

A study of esthetic values in the contemporary scene with particular emphasis on music as it fits in the social scheme.

**601-2. Advanced Musical Analysis (5-5).**

A comparative study of the functional aspects of music analysis. Examples from a variety of great music literature are studied by score and recording.

**603. Brass Instruments Techniques (1). Lec. 1, Lab. 3.**

Course designed to work out specific problems with graduate students in furthering their knowledge of and skill on brass instruments.

**604. Woodwind Instruments Techniques (1). Lec. 1, Lab. 3.**

Course designed to work out specific problems with graduate students in furthering their knowledge of and skill on woodwind instruments.

**605. Percussion Instruments Techniques (1). Lec. 1, Lab. 3.**

Course designed to work out specific problems with graduate students in furthering their knowledge of and skill on percussion instruments.

**621. Instrumental Music Literature (5).**

Study through performance and listening of the great instrumental music from the Renaissance to the present to acquaint musicians with original music for the various media, including solos, small and large ensembles, string and wood.

**641-2-3. Graduate Study in Applied Music (1-1-1).**

Advanced private study to further the self-improvement and skill in the graduate students' performing medium. (Special fee—see under Applied Music Fees.)

**661-2. Advanced Instrumental and Choral Conducting (1-1). Lec. 1, Lab. 2.**

Advanced conducting skills in handling instrumental and choral groups, problems in conducting and score reading along with desirable baton techniques.

**665-6. Scoring for Instruments (5-5).**

Practical arranging and transcription for use in all musical situations including beginners, and marching bands. Each individual will choose his own project. May be substituted for MU 601-2.

**699. Research and Thesis (credit to be arranged).**

### Naval Science (NS)

(List of courses will be found on page 188.)

**Pharmacy (PY)***Professors Coker, Hargreaves, Hocking, and Williams**Associate Professors Rash and Wilken**Assistant Professor Kochhar***Pharmacy**

100. **Pharmacy Convocation (0).** All quarters.  
Required of all pharmacy students each quarter. Professional topics discussed by visiting lecturers, faculty and students.
101. **Introduction to Pharmacy (3).**  
Orientation and general survey of the scope of pharmacy, its organizations and literature with a brief introduction into principles of pharmacy.
102. **Pharmaceutical Arithmetic (5).** Pr., MH 112, PY 101.  
Calculations necessary to the practice of pharmacy. Among the topics treated are weights and measures, specific gravity, specific volume, percentage solutions, concentration and dilution, alligation and commercial calculations.
202. **Pharmaceutical Terminology (2).** Pr., third year standing.  
Common terms and abbreviations used in the professional and scientific aspects of pharmacy and medicine.
205. **History of Pharmacy (3).** Pr., PY 101.  
A general survey of the history of pharmacy designed to provide a knowledge of the heritage of the profession.
301. **Pharmaceutical Technology I (5).** Lec. 3, Lab. 6. Pr., CH 301, PY 102, fourth year standing.  
Physical-chemical principles applied to develop thorough understanding of solid pharmaceutical dosage forms from bulk powders to more sophisticated sustained-release medications.
303. **Pharmaceutical Technology II (5).** Lec. 3, Lab. 6. Pr., PY 301, CH 206.  
Continuation of PY 301 in which physical and chemical principles concerning homogeneous liquid dosage forms are studied. Selected official solutions, syrups, elixirs, spirits, etc., are considered from this viewpoint.
304. **Pharmaceutical Technology III (5).** Lec. 3, Lab. 6. Pr., PY 303.  
Continuation of PY 303 dealing with heterogeneous and plastic systems. Physical and chemical principles utilized in the study of the plastic and polyphasic dosage forms including ointments, creams, suspensions, colloids, mixtures, magmas, etc.
308. **Hospital Pharmacy Administration (3).** Pr., fourth year standing.  
The development of hospitals, their place in society, importance and place of pharmacy in hospitals, administrative and policy making aspects together with indepartmental relationships. Field trips will be taken to representative hospital pharmacies.
400. **Dispensing Pharmacy I (5).** Lec. 3, Lab. 6. Pr., PY 304.  
Compounding of prescriptions of an elementary nature, illustrating virtually all types of prescriptions.
401. **Dispensing Pharmacy II (5).** Lec. 3, Lab. 6. Pr., PY 400.  
Advanced dispensing pharmacy and prescription laboratory. Prescriptions of an advanced nature are compounded. Special attention is given to the subject of incompatibilities.
402. **Dispensing Pharmacy III (5).** Lec. 3, Lab. 6. Pr., PY 401.  
Practical pharmaceutical compounding and dispensing, related to modern drug outlets. Certain aspects of drug detailing will be discussed.
409. **Applied Hospital Pharmacy (3).** Lec. 1, Lab. 6. Pr., PY 303, PY 400.  
Application of pharmaceutical practices and procedures to hospital pharmacy. Field trips will be taken to representative hospital pharmacies.
410. **Advanced Dispensing Pharmacy (5).** Lec. 3, Lab. 6. Pr., PY 401, junior standing.  
More complex problems in dispensing pharmacy with correlated laboratory work.
411. **Survey of Pharmaceutical Manufacturing (3).** Lec. 2, Lab. 3. Pr., PY 304.  
Manufacturing procedures and operations. In the laboratory selected large scale production problems are carried out to completion.
412. **Public and Professional Relations (3).** Pr., fourth year standing.
413. **Special Problems (1-5).** Pr., fourth year standing.
414. **Pharmaceutical Specialities (3).** Pr., fifth year standing.  
More important non-official specialities available to modern prescription practice and over-the-counter sales are studied.



## COURSES FOR GRADUATE STUDENTS

601. Parenteral Preparations (5). Lec. 3, Lab. 6. Pr., 401 and consent of instructor.  
Theory, preparation and testing of various medicinal solutions intended for injection into the body. Pharmaceutical principles are applied to problems of filtration, sterilization, isotonicity, hydrogen ion concentration and aseptic techniques.
602. Tablet Manufacture (5). Lec. 2, Lab. 9. Pr., PY 401.  
Essentials in the manufacture, coating and evaluation of compressed tablets.
603. Product Development (5). Lec. 3, Lab. 6. Pr., PY 401.  
Formulation, evaluation and control techniques as well as actual manufacture of products of pharmaceutical and cosmetic nature.
680. Graduate Seminar (1). Pr., admission to Graduate School.  
Required of all pharmacy graduate students each quarter.

## Pharmaceutical Chemistry

201. Inorganic Pharmaceutical Chemistry (5). Pr., CH 105, 206.  
Official inorganic chemicals; their manufacture, chemical properties, pharmaceutical and therapeutic uses, doses and preparations. Tests for identity and purity, together with assay methods are considered.
203. Organic Pharmaceutical Chemistry (5). Pr., PY 201, CH 207-208.  
Official organic chemicals; their manufacture, chemical properties, trade names, pharmaceutical and therapeutic uses, doses and preparations.
302. Organic Pharmaceutical Chemistry (5). Pr., PY 203.  
Continuation of PY 301.
305. Pharmaceutical Assay (3). Lec. 1, Lab. 6. Pr., CH 206, CH 208.  
Pharmaceutical assay procedures not covered in general quantitative analysis, physical and chemical constants of fatty oils, proximate assay of vegetable drugs, official arsenic test, alcohol determination, alkaloidal chemistry and the assay of alkaloidal drugs.
403. Toxicology (5). Pr., PY 406, CH 208 and junior standing.  
Fundamentals of the isolation, identification, symptoms and treatment of the more common poisons.
404. Chemistry of Natural Products (5). Pr., CH 208 and junior standing.  
Chemistry and nomenclature of fatty oils, volatile oils, steroids, glycosides, alkaloids, antibiotics, vitamins, and other natural products.
421. Advanced Inorganic Pharmaceutical Chemistry (5). Pr., PY 201 and junior standing.  
Critical study of the commercial aspects of chemicals of medical interest, radioactivity and the preparation, handling and use of isotopes used as diagnostic or therapeutic agents.

## COURSES FOR GRADUATE STUDENTS

- 620-21-22. Chemistry of Synthetic Drugs (5-5-5). Pr., PY 301-2 or consent of instructor.  
Historical background, pertinent literature, organic name reactions, nomenclature, relation of chemical structure and physical properties to biological activity, isosterism, metabolite antagonism, enzyme inhibition, an exhaustive consideration of the chemistry and biological activity of the various therapeutic classes.
- 623-24-25. Synthesis of Drugs (5-5-5). Lec. 2, Lab. 9. Coreq., PY 620-21-22 or consent of instructor.  
Laboratory procedures in the synthesis of intermediates and representative compounds studied in PY 620-21-22.
- 626-27. Analytical and Control Methods (5-5). Lec. 3, Lab. 6. Pr., PY 305 or consent of instructor.  
Extensive study of the principles and techniques of analysis as applied to the various therapeutic classes.
628. Steroid Chemistry (5). Pr., PY 620 or consent of instructor.  
Structure determination, chemistry, synthesis and structure relationships of steroids of pharmacological and pharmaceutical importance.
629. Alkaloid Chemistry (5). PY 620 or consent of instructor.  
Structure determination, chemistry and synthesis of alkaloids with emphasis on the alkaloids of pharmacological and pharmaceutical importance.

## Pharmacology

300. Public Health (5). Pr., VM 200, VM 204.  
Common communicable diseases including the course and symptoms of the disease, the causative agents, mode of transmission, and control measures including hygienic and sanitation measures as well as immunization procedures. A survey of Federal and State Health agency activities is included.

309. **Pharmacology I (5).** Lec. 4, Lab. 3. Pr., ZY 101-102, CH 301.  
Essentials of anatomy and physiology including a brief consideration of elements of histology and embryology with an introduction of pharmacodynamics as related to these sciences.
310. **Public Health (3).** General elective. Pr., junior standing.  
Non-technical survey of the common communicable diseases including the causative agents modes of transmission and symptoms. Hygienic, sanitation and immunization control measures are discussed along with the roles of Federal and State Health agencies. (Not open to pharmacy majors.)
405. **Pharmacology II (5).** Lec. 4, Lab. 3. Pr., PY 309.  
Pharmacological study of the official and more important non-official drugs. Absorption and fate, mechanism of action, pharmacochemical relationships and toxicology, together with a brief coverage of pathological conditions indicating specific uses in therapy are main considerations.
406. **Pharmacology III (5).** Lec. 4, Lab. 3. Pr., PY 405.  
Continuation of PY 405. Topics for consideration are the vitamins, hormones, biologicals and antibiotics with major emphasis on endocrine products and deficiency states as related to specific therapy.
407. **Chemotherapeutic Drugs (3).** Pr., PY 309.  
Structure, action relationship of drugs and their use in inhibiting or destroying microorganisms.
430. **Pharmacological Techniques (5).** Lec. 4, Lab. 3. Pr., PY 309 and junior standing.  
Principles and techniques of surgical procedures used in drug testing with animals, including preparation of the animal, asepsis, and care of surgical instruments.
431. **Pharmacology IV (5).** Lec. 4, Lab. 3. Pr., PY 405-6 and junior standing.  
Cellular pharmacology including a study of its basis in cytology.
432. **Fundamentals of Bionucleonics (3).** Lec. 2, Lab. 3. Pr., PS 206 or consent of instructor and junior standing.  
Theoretical and practical application of trace level radioactivity for research, application to pharmacy and allied sciences.

## COURSES FOR GRADUATE STUDENTS

631. **Advanced Pharmacology (5).** Pr., PY 430-31.  
Advanced pharmacodynamics with emphasis on mechanism of action of drugs affecting the nervous system.
633. **Bioassay (5).** Lec. 3, Lab. 6. Pr., PY 430 and suitable course in statistics.  
Principles and techniques of bioassay with primary attention to official bioassay methods.
637. **Pharmacology Seminar (3).** Pr., PY 430.

## Pharmacognosy

306. **Pharmacognosy I (5).** Lec. 4, Lab. 3. Pr., BY 205, CH 301.  
Biochemical presentation of drugs of natural origin including morphology, histology, mode of production, medicinally active constituents, assays, and applications.
307. **Pharmacognosy II (5).** Lec. 4, Lab. 3. Pr., PY 306.  
Continuation of PY 306.
440. **Histology of Natural Products (3).** Lec. 2, Lab. 4. Pr., consent of instructor and junior standing.  
Micro-chemical, micro-analytical, and micro-sectioning techniques, including methods of fixation, dehydration, embedding, and staining tissues in the preparation of permanent mounts of microslides, with use of microtome and micro-dissection techniques.
441. **Commercial Pharmacognosy (3).** Pr., consent of instructor.  
Commercial aspects of crude drugs, both wild and cultivated, foreign and domestic; composition and application of pesticides.

## COURSES FOR GRADUATE STUDENTS

640. **Advanced Pharmacognosy (5).** Lec. 3, Lab. 6. Pr., PY 307 or equivalent.  
Comprehensive study of both official and unofficial crude drugs conducted macroscopically and microscopically; techniques of use of camera lucida, microtome, and microphotographic equipment; pharmacognosy of previously undescribed drugs.
641. **Advanced Microanalysis (5).** Lec. 2, Lab. 9. Pr., permission of instructor.  
Techniques of microchemistry and microanalysis of crude plant and animal drugs.
642. **Histology of Medicinal Plants (5).** Lec. 3, Lab. 6. Pr., PY 440.  
Microscopic structure of medicinal plants in fresh or preserved state as related to the origin and fate of plant compounds.
699. **Research and Thesis (5).**

## Pharmacy Administration

- 204. Drug Marketing (3).** Pr., EC 200.  
Basic principles of marketing drug products from the manufacturer to the consumer.
- 408. Pharmaceutical Economics (5).** Pr., EC 200, EC 211.  
Elements of drug store management; drug store layout, buying, sales production, salesmanship, merchandising, and other affiliated considerations in the successful operation of a retail drug store.
- 415. Pharmaceutical Jurisprudence (2).** Pr., fourth year standing.  
Legal aspects of pharmaceutical practice, giving primary consideration to State and Federal regulations bearing thereon; including Alabama State Practice Act, Harrison Anti-Narcotic Act, and Food and Drug Regulations of the Federal Government.

## Philosophy (PA)

Professor J. H. Melzer

Assistant Professors Gunter, McKown, and Raynor

- 202. Ethics and Society (5).**  
Broad survey of human values as expressed in customs, institutions, politics, and philosophies of principal world civilizations. Ethics in this sense shown as grounded in and influencing the total culture of a people.
- 301. Introduction to Philosophy (3).** General elective.  
Introductory survey of the basic philosophical problems underlying western civilization.
- 302. Introduction to Ethics (3).** General elective.  
Introduction to the general principles of morality and human conduct.
- 307. Scientific Reasoning (5).**  
Principles of logical reasoning used by scientists and others. (Not open to students with credit in PA 308.)
- 308. Introduction to Logic (3).** General elective.  
Principles of logical thinking with emphasis upon a functional application of these principles.
- 310. Eastern Religious Thought (3).** General elective.  
Readings from primary and secondary sources related to Hinduism, Jainism, Buddhism, Taoism, Confucianism, Shintoism, and Sikhism.
- 315. Western Religious Thought (3).** General elective.  
Readings from primary and secondary sources related to Ancient Egyptian, Mesopotamian, and Greek religions, Judaism, Zoroastrianism, Christianity, and Islam.
- 320. Formal Logic (5).**  
Extended treatment of symbolic logic. (PA 308 is desirable but not necessary for this course.)
- 325. Aesthetics (5).**  
Inquiry into the history of aesthetic theory for the purpose of determining foundations of critical reflection on the arts of literature, drama, painting, sculpture, architecture, and music.
- 330. Philosophy of Religion (5).**  
Philosophical examination of religious ideas including such topics as the origin of religion; the nature of religion; the various concepts of God, the soul, immortality; and internal and external criticisms of religion.
- 400. Philosophy of Science (5).** Pr., junior standing.  
Implications for human values of some important concepts and methods in the social and natural sciences.
- 401. The Philosophy of Communism (5).** Pr., junior standing.  
Primarily a study of the theory, practice, and social motivation of Marxism, but with some additional studies in peripheral areas.
- 410. Ancient and Medieval Philosophy (5).** Pr., junior standing.  
Philosophical thought of ancient Greece and Rome, and of medieval Christendom.
- 420. Modern Philosophy (5).** Pr., junior standing.  
Philosophical thought from Descartes through Kant.
- 430. Contemporary Philosophy (5).** Pr., junior standing.  
Philosophical thought from James through the present time.
- 440. American Philosophy (5).** Pr., junior standing.  
American philosophical thought from colonial times to William James.
- 650. Seminar (5).** Pr., graduate standing and permission of instructor.  
Content will change each quarter in a calendar year, varying from movements of thought to intensive study of one of the great thinkers such as Plato or Whitehead.

**Physics (PS)***Head Professor Carr**Professor Hughes**Associate Research Professor Budenstein**Associate Professors French, Latimer, Shewell, and Sparks**Assistant Professors Askew and Harlan**Instructors Orr, Shever, and Ward**Research Associate Sanyal*

201. **General Physics—Mechanics (5).** Lec. 4, Lab. 3. Pr., MH 201 or 262 (or concurrently).  
The first of three quarters in a basic physics course comprising PS 201-202-203. The concepts of classical physics are developed and emphasis is placed upon the solution of problems. A series of selected quantitative experiments is performed in the three-hour weekly laboratory periods. For students in chemistry, engineering, physics and engineering physics.
202. **General Physics—Heat, Sound, and Light (5).** Lec. 4, Lab. 3. Pr., PS 201; MH 202 or 263 (or concurrently).
203. **General Physics—Electricity and Magnetism (5).** Lec. 4, Lab. 3. Pr., PS 201; MH 202 or 263 (or concurrently).
204. **Survey Course in Physics (5).** Credit in PS 201 and 205 excludes credit for this course.  
An effort to develop an intelligent view of the general field of physics within the limits of a one-quarter course. For students in aeronautical administration, agriculture, agricultural and industrial arts education, and industrial design.
205. **Introductory Physics—Mechanics, Heat and Sound (5).** Lec. 4, Lab. 3. Pr., MH 112 or 160.  
The first half of a two-quarter course in the fundamentals of physics. The quantitative as well as the qualitative aspects of the subject are stressed. For students in architecture, forestry, laboratory technology, pharmacy, pre-dentistry, pre-medicine, pre-veterinary, medicine, industrial management, and science and literature. The weekly three-hour laboratory periods are devoted to the performance of appropriate experiments.
206. **Introductory Physics—Electricity and Light (5).** Lec. 4, Lab. 3. Pr., PS 205.  
Continuation of PS 205.
207. **Physics for Home Economics Students (5).**  
Designed primarily to give the student an understanding of physical principles as they relate to home economics.
210. **Pre-Medical Physics (5).** Lec. 4, Lab. 3. Pr., PS 206.  
Introduction to modern physics, including atomic structure, nuclear physics, x-rays, and special relativity.
217. **Astronomy (3). General elective.**  
Descriptive astronomy, accompanied by occasional observations of the heavenly bodies with a three-inch refracting telescope.
301. **Intermediate Electricity and Magnetism (5).** Lec. 4, Lab. 3. Pr., PS 203, MH 202 or 264.  
Phenomenological development of classical electricity and magnetism leading to the formation of Maxwell's equations. Topics include: laws of Coulomb, Gauss, Ampere, and Faraday; properties of dielectric and magnetic media, a.c. circuit theory, Maxwell's displacement current, and an introduction to plane waves.
302. **Electronics (5).** Lec. 4, Lab. 3. Pr., PS 301.  
Simple alternating current theory. Theory of vacuum and gas-discharge tubes and their circuits. Thermionic emissions, space-charge phenomena, and electron ballistics. Grid-controlled tubes and circuit analysis. Voltage and current amplifiers; feedback theory. Simple computing circuits. Appropriate laboratory exercises form a part of the course.
303. **Optics (5).** Lec. 4, Lab. 3. Pr., PS 202, MH 202 or 264.  
Intermediate course in physical optics comprising wave motion, reflection, refraction, dispersion, origin of spectra, interference, diffraction, and polarization, with appropriate laboratory experiments.
304. **Applied Spectroscopy (5).** Lec. 4, Lab. 3. Pr., PS 202, MH 202 or 263.  
The more important concepts of the origin of spectra; a study of instruments and techniques of practical spectroscopy. Laboratory experiments designed to give students in both Chemistry and Physics a working knowledge of spectroscopy as a tool.
305. **Introduction to Modern Physics (5).** Lec. 4, Lab. 3. Pr., PS 202-203, MH 202 or 264.  
Introduction to selected topics of modern physics, including atomic structure, X-rays, classical and quantum statistics, quantum mechanics, special relativity, and nuclear physics.

401. Theoretical Physics I—Mechanics (5). Lec. 4, Prob. 2. Pr., junior standing, PS 203, MH 361.  
Newton's laws; systems of particles; conservation laws; free, damped, and forced oscillations; introduction to calculus of variations.
402. Theoretical Physics II—Mechanics Continued (5). Lec. 4, Prob. 2. Pr., junior standing, PS 401.  
Calculus of variations; Hamilton's Principle and Lagrange's equations; vibrating systems; vector analysis; dynamics of rigid bodies.
403. Theoretical Physics III (5). Lec. 4, Prob. 2. Pr., PS 301, PS 402, junior standing.  
Introduction to electromagnetic theory using the mathematics of vector fields. The physical interpretation of the different fields is stressed.
404. Thermodynamics (5). Pr., junior standing, PS 202-203, MH 402.  
Equations of state. First and second laws of thermodynamics. The absolute temperature scale; the entropy, free energy, and Gibbs potential; general conditions of equilibrium. Application to reactions in gases and dilute solutions. Nernst's postulate.
405. Nuclear Physics (5). Lec. 4, Lab. 3. Pr., junior standing, PS 305, MH 264 or 301.  
Nuclear radiations; transmutations; natural and artificial radioactivity; binding energy; nuclear forces; structure of the nucleus; nuclear fission and its applications. Appropriate laboratory experiments form a part of the course.
409. Introduction to Reactor Physics I (5). Lec. 4, Lab. 3. Pr., junior standing, PS 305, PS 405, MH 402, or permission of instructor.  
Brief account of nuclear physics; basic instrumentation; interaction of neutrons with matter; chain reactions; neutron diffusion; the bare homogeneous thermal reactor; lattice constants; reactor kinetics.
410. Introduction to Reactor Physics II (5). Lec. 4, Lab. 3. Pr., junior standing, PS 409.  
Homogeneous reactor with reflector; reactor control; power reactors; thermal aspects of reactor systems; design variables; radiation detection and measurement; shielding; radiation hazards.
413. Introduction to X-ray Crystallography (5). Lec. 4, Lab. 3. Pr., junior standing, PS 305, or permission of instructor.  
Principles of crystallography, properties of x-rays, Laue and powder techniques, applications to crystal structure and grain size.
414. Electron Optics and Microscopy (5). Lec. 3, Lab. 6. Pr., junior standing and PS 203 and MH 264.  
Electron optics; theory and operation of the electron microscope; techniques of mounting, replication and shadowing of specimen; electron diffraction, theory and interpretation of patterns. Demonstration experiments and laboratory exercises constitute the experimental portion of the course.
417. Introduction to Biophysics (4). Pr., permission of the instructor, junior standing.  
Survey of the physics of biological systems: effects of light and high energy radiations, bio-electric phenomena, bio-energetics, etc.
421. Advanced Electronic Circuits (5). Pr., junior standing, PS 302.  
Advanced network and feedback theory; voltage regulators, oscillators; pulse and sweep generators; electronic instruments.
430. Physics for High School Teachers I (4). Lec. 3, Lab. 3. Pr., PS 204 or equivalent, junior standing.  
Fundamental laws in mechanics, heat, and sound with particular emphasis upon such broad principles as Newton's laws of motion, the conservation of energy and momentum, and the transfer of energy.
431. Physics for High School Teachers II (4). Lec. 3, Lab. 3. Pr., PS 430, junior standing.  
Fundamental laws in light, electricity, magnetism, and an introduction to some basic phenomena in atomic, molecular, and nuclear physics.
435. Introduction to Solid State Physics (5). Pr., MH 361, junior standing.  
Survey of solid state phenomena including lattice vibrations, band description of electronic states in metals, semiconductors and insulators, and magnetic phenomena.
470. Health Physics (5). Lec. 4, Lab. 3. Pr., permission of the instructor, junior standing.  
Fundamental principles of radioactivity; instrumentation for detecting and monitoring radioactive nuclides; radiation effects on man; permissible radiation dosages; safe handling of radioactive substances; and shielding from various radiations.

## GRADUATE COURSES

601. **Advanced Dynamics I (3).** Pr., PS 402.  
D'Alembert's principle; introduction to the calculus of variation; Hamilton's principle and Hamilton's equations; principle of least action.
602. **Advanced Dynamics II (3).** Pr., PS 601.  
Canonical variables and contact transformations; the Hamilton-Jacobi equation; action; angle variables; Poisson brackets; continuous systems.
603. **Mechanics of Continuous Media (3).** Pr., PS 602.  
Introduction to theories of elasticity and fluids.
- 604-5-6. **Theory of Electricity and Magnetism I-II-III (3-3-3).** Pr., PS 403, Coreq., MH 607-8-9.  
Maxwell's formulation of classical electromagnetic theory. Includes electrostatics, magnetostatics, potential problems, electric currents, Maxwell's equations, electromagnetic waves, radiation theory, boundary value problems.
607. **Physical Optics (3).** Pr., PS 606.  
Application of Maxwell's equations to optical phenomena including Kirchhoff's formulation, propagation of electromagnetic waves in anisotropic media, double refraction, dispersion.
617. **Modern Physics I (3).** Pr., PS 305, MH 404, or permission of instructor.  
Special theory of relativity; quantum mechanics with applications.
618. **Modern Physics II (3).** Pr., PS 617 or PS 641, or permission of instructor.  
Atomic and molecular spectra, quantum statistics; band theory of solids; x-rays.
619. **Modern Physics III (3).** Pr., PS 617 or PS 641, or permission of instructor.  
Nuclear physics, particles.
628. **Statistical Mechanics I (3).** Pr., PS 404, 601.  
Statistical ensembles in classical mechanics, the Maxwell-Boltzmann distribution law, Boltzmann's H theorem, and an introduction to quantum statistical mechanics.
629. **Statistical Mechanics II (3).** Pr., PS 628.  
Quantum mechanical H-theorem, applications, introduction to non-equilibrium statistical mechanics.
630. **Modern Physics for High School Teachers (5).** Lec. 4, Lab. 3. Pr., junior standing, PS 431 or equivalent, MH 487 or equivalent.  
Survey of developments in physics since 1890 including: structure of matter; atomic and molecular spectra; x-rays, natural and induced radioactivity; nuclear fission and fusion; and cosmic rays.
632. **Special Theory of Relativity (3).** Pr., PS 602, PS 605.  
Relativistic mechanics, covariant formulation of Maxwell's field equations, Lagrangian and Hamiltonian formulation of fields.
635. **Solid State Physics I (3).** Pr., PS 435, PS 643.  
Electrons in a perfect crystal lattice, quantum mechanical formulations of the many body problem, molecular bonding, description of the symmetry properties of solids.
636. **Solid State Physics II (3).** Pr., PS 635.  
Brillouin Zones, cohesive energy, interaction of electrons with electromagnetic radiation, interactions between electrons and the crystal lattice.
637. **Solid State Physics III (3).** Pr., PS 636.  
Magnetic properties of solids; para-, dia-, ferro-, and antiferromagnetic effects. Resonance experiments, optical properties of solids.
639. **Directed Reading in Physics (2).** Pr., permission of instructor. (May be taken more than one quarter.)
641. **Quantum Mechanics I (3).** Pr., PS 402.  
Uncertainty principle; Schroedinger's equation; one-dimensional problems; operator formalism; angular momentum.
642. **Quantum Mechanics II (3).** Pr., PS 641.  
Central forces; matrix representations; approximate methods; particle in electromagnetic field.
643. **Quantum Mechanics III (3).** Pr., PS 642.  
Spin; identical particles; Pauli principle; applications.
- 644-5. **Advanced Quantum Mechanics I-II (3-3).** Pr., PS 632, PS 643.  
Advanced theory of angular momentum with applications to atomic and nuclear spectra, relativistic theory of quantum mechanics, the Dirac electron, introduction to field theory.
653. **Seminar in Physics (2).** Pr., permission of instructor. (May be taken more than one quarter.)
655. **Special Topics in Theoretical Physics (3).** Pr., permission of instructor.  
Choice of topic will vary but will include: relativity theory; group theory; atomic and molecular structure; elasticity; fluid mechanics; quantum field theory; low temperature physics. (May be taken more than one quarter.)



661. Nuclear Structure (3). Pr., PS 405, PS 643.  
Selected topics on properties of nuclei.
662. Nuclear Processes (3). Pr., PS 661.  
Radioactive decay, nuclear reactions.
691. Directed Reading in Contemporary Physics. (Credit to be arranged.) Pr., completion of 30 hours of advanced courses in physics. (May be taken more than one quarter.)
699. Research and Thesis. (Credit to be arranged.)
799. Research and Dissertation. (Credit to be arranged.)

### Poultry Science (PH)

*Professors Cottier, Edgar, and Moore*

*Associate Professors Goodman, Howes, Johnson, and Mora*

202. Veterinary Poultry (5). Lec. 4, Lab. 2. Spring.  
Principles of poultry production and their application to students in Veterinary Medicine.
301. General Poultry Husbandry (5). Lec. 4, Lab. 2. Fall, Winter, Spring, Summer.  
Principles of poultry production and their application to general farm conditions, including breeding, feeding, housing, diseases, and culling.
302. Poultry Meat Production (3). Lec. 2, Lab. 2. Fall. Pr., PH 301.  
Practical problems involved in raising broilers, capons, and turkeys for meat production.
404. Poultry Management (5). Lec. 4, Lab. 2. Winter. Pr., PH 301 and junior standing.  
Poultry problems and management of commercial flocks.
405. Poultry Feeding (3). Fall. Pr., PH 301 and junior standing.  
Composition and use of poultry feeds in connection with the demands for growth, body maintenance, and egg production.
406. Incubation and Brooding (3). Lec. 2, Lab. 2. Winter. Pr., PH 301 and junior standing.  
Embryology of the chick, theory and practice of incubation and brooding.
- 407-09. Poultry Problems (3-3). Lec. 1, Lab. 4. Pr., 12 hours PH courses and junior standing. All quarters.  
Investigation on some phase of poultry work.
408. Poultry Diseases and Parasites (5). Lec. 4, Lab. 2. Winter. Pr., PH 301 and junior standing.  
Prevention, diagnosis, control, and treatment of the common diseases and parasites of poultry, designed especially for Agriculture students.
410. Poultry Breeding (3). Lec. 3. Spring. Pr., PH 301, ZY 300, and junior standing.  
Physiology of reproduction and inheritance of various poultry characters responsible for efficient egg and meat production and low mortality.
411. Poultry Marketing (3). Lec. 2, Lab. 2. Spring. Pr., PH 301 and junior standing.  
Grading eggs and poultry and study of problems of poultry marketing.
412. Commercial Poultry Management (3). Lec. 4. Pr., graduate standing.  
Management practices and principles used in the business of producing market eggs, hatching eggs, broilers, and turkeys. (Credit for both PH 404 and PH 412 may not be used in meeting requirements for the Master's degree.)
413. Poultry Sanitation and Diseases (3). Lec. 4. Pr., graduate standing.  
Recommended sanitation practices and the prevention and control of common diseases and parasites of poultry. (Credit for both PH 408 and PH 413 may not be used in meeting requirements for the Master's degree.)
422. Avian Diseases (5). Lec. 4, Lab. 2. Fall.  
Diagnosis, treatment, and prevention of infectious and parasitic diseases. Clinical and autopsy demonstrations are performed during laboratory periods. (For Veterinary students only.)

### GRADUATE COURSES

604. Advanced Poultry Production (5). Lec. 5. Spring.  
Advanced studies on various phases of poultry production.
606. Advanced Poultry Breeding (5). Lec. 4, Lab. 2. Fall.  
Advanced studies of the principles of heredity as applied to poultry breeding.
607. Advanced Poultry Problems (5). All quarters.  
Assigned problems.

608. **Seminar.** Credit to be arranged. Fall, Spring, Winter, Summer.  
Literature in Poultry Husbandry and other fields related to poultry. Emphasis will be given to the preparation, organization and presentation of research material by students and to reporting of current literature in the field. Designed for seniors in Poultry or Animal Husbandry as well as graduate students.
610. **Advanced Poultry Nutrition (5).** Lec. 5. Summer.  
Advanced study of the nutrients, their function and the nutritional requirements of poultry.
611. **Advanced Poultry Management (5).** Lec. 5. Summer.  
Advanced study of the principles of management of commercial poultry flocks.
612. **Advanced Poultry Diseases (5).** Lec. 1, Lab. 8. Spring. Pr., PH 408 or consent of instructor.  
Isolation, cultivation, and identification of bacterial, fungal, and viral agents. Emphasis on biochemical aspects of microbial and nutritional diseases and the mechanisms of the immune response.
613. **Advanced Poultry Diseases (5).** Lec. 1, Lab. 8. Summer. Pr., VM 418 and PH 612, or equivalent.  
Continuation of PH 612 with emphasis on those disease conditions caused by protozoa, helminths, and arthropods and the gross and histopathology of diseases studied in both quarters.
614. **Immunochemistry (5).** Lec. 3, Lab. 4. Fall. Pr., general bacteriology, immunology and organic or biochemistry.  
Advanced study of the fundamental principles of immunology including specificity, antibody synthesis and the thermodynamics of antigen-antibody reactions. Laboratory will include the use of immunodiffusion, immunoelectrophoresis, fluorescent-antibody technique, and quantitation of the precipitin reaction.
615. **Avian Physiology (3).** Fall. Pr., ZY 424 and organic chemistry.  
General physiology of birds with particular reference to domesticated species.
625. **Digestive and Renal Physiology (4).** Spring. Pr., ZY 424 and organic chemistry.  
Review of the digestive and renal physiology of mammalian and avian species with special reference to body fluid homeostasis.
699. **Research and Thesis.** (Credit to be arranged.) All quarters.  
Technical laboratory problems related to poultry.
799. **Doctoral Research and Dissertation.** (Credit to be arranged.) All quarters.

### **Pre-Engineering (PN)**

*Head Professor H. Strong*

101. **History of Engineering (1).** All quarters.
102. **Introduction to the Engineering Profession (1).** All quarters. Pr., PN 101.
103. **Engineering Method (1).** All quarters. Pr., PN 102.  
Use of analysis, experiment, and synthesis in the solution of engineering problems.

### **Psychology (PG)**

*Head Professor Spears*

*Professor McIntyre*

*Assistant Research Professor Dawson*

*Assistant Professors Haynes, Johnson, Kelley, Moon, and Turner*

*Acting Assistant Professor Vallery*

101. **Orientation: Personal and Professional (5).** Fall.  
Personal and professional orientation through reading improvement, individual guidance, library instruction, and analysis of the fields of Psychology.
211. **General Psychology (5).** All quarters.  
Introduction to the scientific study and interpretation of human behavior. Consideration of such topics as learning, motivation, emotion, intelligence, perception, personality, and inter-personal relationships will be undertaken.
213. **Growth and Development of School Age Children (5).**  
Physical, psychological, and social developments of children in grades one to twelve with emphasis on environmental contributions to development. (Not open to students with credit in PG 345 or PG 447.)
214. **Educational Psychology (5).** All quarters. Pr., PG 213.  
Development of the individual during the school years from the standpoint of physical growth and mental growth with special attention to the relationship of the school and the individual's concept of learning, attitude, personality, and mental health.

- 301. Promoting Optimum Development (5). Pr., PG 214.**  
Examination of concepts of psychological maturity and ways of aiding its development in classrooms.
- 311. The Behavior of Man (3). General elective.**  
Humanistic aspects of general psychology emphasizing theory and principles of the science of the behavior of man. Includes topics such as: individual differences, motivation, world of form and space, personality in a social environment, and the assessment of man. (Not available to students who have taken PG 211. May be used as prerequisite for PG 325, PG 330, PG 345.)
- 325. Psychology of Personality (5). Pr., PG 211 or departmental approval.**  
Examination of the nature of personality adjustment with special emphasis on development factors. Topics to be considered are motivation, theories of adjustment, the defense mechanisms, the evaluation of personality, and mental hygiene.
- 330. Social Psychology (5). Pr., PG 211.**  
Effects of the group upon individual and social behavior. A study of the biological antecedents of social behavior; leadership; attitudes; suggestions; institutions; and social conflict.
- 340. Psychometric Methods (5). Pr., PG 211 and MH 127 or departmental approval.**  
Arrangement and treatment of psychological data, application of techniques of data treatment to various psychological areas. Laboratory work in the analysis of experimental data.
- 345. Child Psychology (5). Pr., PG 211.**  
Physical, psychological, and social development of the child and the relation of the child's environment of his development. Special problems of child training in the family and of social adjustment at school will be discussed. (Not open to students with credit in PG 213.)
- 360. Applied Psychology (5).**  
Survey of the contributions of psychology to the fields of advertising, consumer research, selling, medicine, education, law and clinical practice and other professions.
- 410. Advanced Psychology (Principles of Behavior) (5). Pr., PG 211, junior standing.**  
Detailed and systematic examination of the principles underlying the basic psychological processes of development; perception, learning, thinking, emotion, and motivation.
- 414. History of Psychology (5). Pr., 5 hours of Psychology, junior standing.**  
Historical development of modern psychology. The course deals with the nature of the psychological problems that have been raised at different periods and the attempts at solution of these problems.
- 420. Experimental Psychology (5). Lec. 2, Lab. 6. Pr., PG 211 and PG 340 or departmental approval, junior standing.**  
Methods, techniques, and materials required in experimentation in learning, memory, and thinking. The laboratory work is designed to illustrate the basic principles in psychology and give the student first-hand opportunity to study an individual or group of individuals relative to psychological processes.
- 430. Integration of Behavior (5). Pr., PG 211 or PG 212, junior standing.**  
Integration of psychological concepts and information in areas such as leadership, personality, group interaction, and learning in relation to problems of people and problems of working with people.
- 434. Mental Hygiene (5). Pr., 5 hours of Psychology, junior standing.**  
Extended study of adjustment problems, techniques of adjustment, case studies, procedures in diagnosis, and treatment.
- 435. Abnormal Psychology (5). Pr., junior standing, 10 hours of Psychology including PG 211.**  
Various abnormal forms of behavior, with reference material drawn from clinical sources. Problems of interest to the social worker and criminologist will receive attention. Field trips when possible will be taken.
- 445. Comparative Psychology (5). Pr., 10 hours of Psychology, junior standing.**  
Principles of behavior in infra-human organisms, with emphasis upon vertebrates. Special attention given to experiments on motivation, innate behavior, learning, retention and problem solving.
- 446. Physiological Psychology (5). Pr., junior standing, 10 hours of Psychology.**  
Physiological mechanisms underlying certain of the basic behavioral processes accompanying sensation and emotions.
- 447. Adolescent Psychology (5). Pr., junior standing, PG 211 and PG 345 or departmental approval.**  
Continuation of PG 345 covering development and maturation during adolescence with emphasis on the problems of the adolescent's adjustment to his personal and social environment, with special applications to family and school life. (Not open to students with credit in PG 213.)
- 455. Psychological Tests and Measurements (5). Lec. 3, Lab. 4. Pr., junior standing, PG 211, MH 107, PG 340, or departmental approval.**  
Survey of the field of psychological examination and measurement, covering the testing of various aptitude, intelligence, personality characteristics and interests. Laboratory work will involve practice in giving, scoring, and interpretation of tests and other techniques.

461. **Industrial Psychology (5).** Pr., junior standing.  
Survey of the uses of Psychology in business and industry. The course will include projects in personnel selection and classification, familiarization with tests commonly used in industry; management of men on the job, their training, efficiency, morale, attitudes, and achievement. Practical, quantitative, psychological research techniques used in personnel work will be demonstrated.
462. **The Psychology of Training and Supervising Industrial Personnel (3).** Pr., junior standing.  
Application of the principles of learning to the training of factory, office, and sales employees. Utilization and evaluation of training devices. Psychological techniques in foreman training. The Training Within Industry programs such as Job Instruction Training, Job Methods Training, and Job Relations Training will be demonstrated and discussed from the psychological viewpoint.
463. **The Psychology of Interviewing and Classifying Industrial Personnel (3).** Pr., junior standing.  
Principles of interviewing, learning how to interview, training interviews, and field investigation. Interviewing in industrial situations, employment and upgrading, occupational adjustment, industrial counseling, oral examining in civil service agencies, and employer-employee disciplinary and exit interviews. Introduction to the Dictionary of Occupational Titles will also be included.
490. **Special Problems in Psychology (3 to 8).** Pr., junior standing, departmental approval.  
Individual problems course. Each student will work under the direction of a staff member on some experimental or theoretical problem of mutual interest.

## GRADUATE COURSES

601. **Enhancing Human Development (5).**  
Examination of concepts such as the normal personality, the open person, the process person, and optimum development with emphasis on school and other environmental influences in their development.
610. **Modern Viewpoints in Psychology (5).**  
Integration course examining a number of viewpoints in psychology, including structuralism, behaviorism, functionalism, purposive psychology, Gestalt psychology, and psychoanalysis.
611. **Advanced Psychometric Methods (5).** Pr., MH 127, PG 340, PG 420, PG 455, or permission of the instructor.  
Continuation of the PG 340 which includes statistical theory of error and measurement, indices of reliability and validity, norm development, and other research tools and techniques.
615. **Design of Experiments (5).** Pr., PG 611.  
Construction of theory and the formulation of empirical generalizations in terms of logical and statistical advantages and limitations in experimental design.
617. **The Psychology of Learning (5).**  
A study of the problems and theories of learning with emphasis on individual differences.
620. **Advanced Experimental Psychology (5).** Lec. 2, Lab. 6.  
Experimental investigation illustrating basic problems in the field of maturation, fatigue, reflex action, emotion, learning and social functions.
631. **Advanced Social Psychology (5).**  
Evaluation of the various theories explaining social behavior. Consideration and performance of experiments in the field of attitude, prestige and suggestion, social climate, and propaganda.
634. **Advanced Mental Hygiene (5).**  
Emotional satisfactions and adjustment mechanisms of children and adolescents. Behavior disorders and meliorative action for promoting favorable physical, intellectual, social, and emotional growth during formative years, including emphasis on complex personality factors.
637. **Advanced Abnormal Psychology (5).**  
Continuation of Psychology PG 435 with emphasis on case studies and the classification of abnormal groups. Field trips will be taken when possible.
651. **Research Studies in Psychology (5).**  
A problem using research techniques, the problem to be selected in consultation with the supervising professor. The problem should be one which will contribute to the program of the student.
654. **Individual Testing (5).** Lec. 3, Lab. 4. Pr., 20 hours in Psychology including PG 455.  
Theory and practice of measurement of intellectual performance in the individual. Students will be permitted to select either the Binet or Wechsler for practice, depending upon their interests.

**655. Construction and Evaluation of Tests (5).**

Theory of test construction; construction of test items; item analysis; reliability; methods of test validation; the combining of tests into batteries.

**656. Advanced Psychological Measurements (5). Pr., PG 455, PG 654, or departmental approval.**

Nature, administration, and use of complex psychometric instruments in the areas of intelligence, performance, and personality.

**671-2. Projective Theory and Techniques I & II (5-5). Pr., departmental approval.**

Intensive study of the foundation and theory of projective diagnosis in clinical psychology. Supervised practice in administering, scoring and interpreting projective tests; intensive case study work. Emphasis is placed upon interpretation of the tests in reference to different personality structure and diagnoses of these differences.

**690. Seminar (1-5). (May be repeated for a total not to exceed 10 hours credit.)****699. Research and Thesis. (Credit to be arranged.)****Radiological Sciences (RS)**

*Head Professor Zallen*

*Research Lecturers Augustine and Carter*

The Department of Radiological Sciences provides training leading to the Master of Science Degree in Radiological Sciences. Radiological Sciences is a new field which deals with a multitude of complex problems covering analytical determination of radioactive levels of the environment, study of acute and chronic effects of ionizing radiation on animate and inanimate objects, investigative studies in radiochemical procedures, electronic detection and engineering.

The Department enjoys a working relationship with The Division of Radiological Health of the U.S. Public Health Service and the U.S. Atomic Energy Commission. The candidate will receive a portion of his training at one of these facilities. (See Graduate Bulletin for detailed information.)

**600. Seminar in Radiological Sciences (1). (May also be taken without credit.) Pr., departmental approval. Required of all majors. Every quarter except Summer.**

A critical analysis of current experimental work in the radiological sciences.

**601. Special Problems (1-3).**

Special problems related to research in radiological sciences.

**610. Environmental Radiological Sciences I (5). Lec. 4, Lab. 3. Pr., satisfactory courses in mathematics, chemistry and physics, and departmental approval.**

Theory and practice of radiological counting devices. Air particulate measurement devices along with study of pertinent literature.

**611. Environmental Radiological Sciences II (5). Lec. 4, Lab. 3. Pr., RS 610 and satisfactory courses in biology and departmental approval.**

Radionuclide methodology as applied to radiological sciences practices. Decontamination procedures and theory including biochemical analysis.

**612. Administration of a Radiological Control Program (5). Lec. 4, Lab. 3. Pr., RS 610 and departmental approval.**

Detailed analysis of existing regulations, federal and international; development of a program including laboratory work and administration.

**620. Advanced Radiological Sciences (5). Lec. 3, Lab. 6. Pr., 611 and departmental approval.**

Computations and shielding from all forms of ionizing radiation; chemical and photographic dosimetry is included. Treatment of radioactive wastes.

**621. Biological and Physical Effects of Radiation (5). Lec. 4, Lab. 3. Pr., RS 611 and departmental approval.**

A study of radiological damage in physical and biological systems; evaluation procedures.

**Religious Education (RE)****301. Religion and Modern Thought (3). General elective.**

The relation between the philosophical foundations of Christianity and modern thought in other fields.

**303. Christian Ethics (5).**

Application of Christian Ethics to current problems, the relationship of Christian and personal ethics, and other phases of the science of right conduct and morals are brought out in the course.

304. **The Bible as Literature (5).**  
Survey of the types of literature in the books of the Bible, including reading and study of selected examples of different forms of poetry and prose, and observation of the religious truths and spirit of each selection. Consideration of the influence of the Bible on modern literature will be noted.
305. **Comparative Religions (3). General elective.**  
Principal readings of the world, including readings in the history and literature of the people whose religions are discussed.
306. **Studies in the Gospels (3). General elective.**  
Characteristics of the Gospels and the harmony among them.
307. **History of the Christian Church (3). General elective.**  
History of the Christian Church from the close of the New Testament period to the present time with chief emphasis upon the development in Western Europe and in the United States.
308. **The Epistles of Paul (3). General elective.**  
Epistles of Paul in the New Testament; their dates, backgrounds and arguments; the major emphases of Paul's thought; particular studies of portions of Thessalonians, 1 Corinthians and Romans to demonstrate typical Pauline themes.
309. **The Prophets of Israel (3). General elective.**  
History of the Hebrew religion as the background of Christianity. Selected figures of the Old Testament are studied; each seen in his own day seeking to interpret his times in light of the eternal messages he was called to deliver.

### Secondary Education (SED)

*Acting Head Professor Atkins  
Professors Davis, Herndon, and Scheid  
Associate Professors Dorné and Justice  
Assistant Professors Carter, Ensminger\*, and Weaver  
Instructors Appleby\*, Justice\*, Nixon\*, and Ottis  
Visiting Professor Vinson*

#### Undergraduate

101. **Orientation: Personal and Professional (3).**  
Designed to help transfers from other curricula and students enrolled in other schools achieve optimum personal, social and intellectual development as college students and to assist them in understanding teaching as a profession. (Students sectioned by area of specialization.) (Credit in SED 101 excludes credit in SED 102-3-4.)
- 102-3-4. **Orientation: Personal and Professional (1-1-1).**  
(Students sectioned by area of specialization.) (Credit in SED 102-3-4 excludes credit in SED 101.)  
(A) Art, (B) Business Education, (C) Dramatic Arts, (D) Foreign Languages, (E) Home Economics, (G) Language Arts, (H) Mathematics, (I) Mental Retardation, (J) Music, (K) Science, (L) Social Science, (M) Speech, (N) Speech Correction, (S) Undeclared Majors.
201. **Education (2).**  
Designed to help prospective teachers in the guidance of students. (A) Art Expression, (J) Music Experiences, (O) Exceptional Children, (F) Communication Problems, (Q) Materials of Instruction, (R) Improvement in Reading.
- 201L. **Education (1). Lab. 2.**  
Laboratory may be taken concurrently with the corresponding lecture course or independent of the lecture.

### Curriculum and Teaching

Undergraduate students in secondary education with a teaching major and minor in secondary education only will take one course in Teaching and one course in Program in the major field and one course in either Teaching or Program in the minor field.

Students in secondary education may pursue a curriculum leading to certification for teaching in selected subject-matter fields in both the elementary and the secondary school. When this type program is pursued, certification requires that the student complete both the Teaching and the Program courses in the teaching field or fields in which certification is expected. Teaching fields for the twelve-grade program include health, physical education and recreation, industrial arts, and the subject-matter areas listed under Interdepartmental.

Teaching and Program courses may be scheduled and taught as separate courses, related courses, or as a unified program.

\* Temporary.



405. Teaching in Secondary School (3). Lec. 2, Lab. 2. Pr., 9 hours of Psychology, FED 200 or equivalent; Pr., or coreq., FED 300 or equivalent.  
(B) Business Education (Fall); (D) Foreign Languages (Fall); (G) Language Arts (Fall, Spring); (H) Mathematics (Spring); (K) Science (Fall); (L) Social Science (Fall, Winter, Spring).
407. Teaching Home Economics Education (5). Lec. 4, Lab. 2. Fall, Spring. Pr., 9 hours of Psychology, FED 200 or equivalent; Pr., or coreq., FED 300 or equivalent.
410. Program in Secondary School (3). Lec. 2, Lab. 2. Pr., 9 hours of Psychology, FED 200 or equivalent; Pr., or coreq., FED 300 or equivalent.  
(B) Business Education (Spring); (D) Foreign Languages (to be arranged); (G) Language Arts (Winter, Spring); (H) Mathematics (Spring); (K) Science (Spring); (L) Social Science (Fall, Winter, Spring).
412. Program in Home Economics Education (4). Lec. 3, Lab. 2. Fall, Spring. Pr., 9 hours of Psychology, FED 200 or equivalent; Pr., or coreq., FED 300 or equivalent.
425. Student Teaching in Secondary School (10 or 15). Fall, Winter, Spring. Pr., 9 hours of Psychology, FED 200 or equivalent; FED 300 or equivalent, two courses on Teaching and Program in the Secondary School, and junior or senior standing.  
(B) Business Education, (D) Foreign Languages, (F) Home Economics Education, (G) Language Arts, (H) Mathematics, (K) Science, (L) Social Science.

#### Advanced Undergraduate and Graduate

475. Problems in Improvement of Reading at the Secondary School Level (3). Pr., teaching experience or consent of instructor.  
Examination of problem areas of effective reading instruction in developmental reading from grades seven through twelve. Emphasis on techniques and materials for the teaching of comprehension, study skills, vocabulary, and other related areas in the reading program and in the content areas of the secondary school.
494. Organization of Instrumental Music (3). Pr., IED 414.  
Theory and practice in the organization and administration of instrumental music in public schools.
495. Organization of Choral Music (3). Pr., IED 414.  
Theory and practice in the organization and administration of choral music in public schools.

#### Graduate

646. Studies in Education (1-3). Pr., One quarter of graduate study.  
Study of a problem using research techniques, to be selected in consultation with the supervising professor. A problem should be selected which will contribute to the program of the student. (Credit in ED 651 prior to 1960 excludes credit in this course.)
- Each of these courses, 651, 652, 653, and 654, applies to the following areas of the secondary school program: (B) Business Education, (D) Foreign Languages, (F) Home Economics Education, (G) Language Arts, (H) Mathematics, (K) Science, and (L) Social Science.
651. Research Studies in Education in Areas of Specialization (5). Pr., 18 hours of appropriate subject matter and 36 hours of psychology and professional education.  
Review, analysis, and interpretation of available research with emphasis on designing new research to meet the changing needs of the school.
652. Curriculum and Teaching in Areas of Specialization (5). Pr., 18 hours of appropriate subject matter and 36 hours of psychology and professional education.  
Critical study of teaching practices and reappraisal of selecting experiences and content for curriculum improvement.
653. Organization of Program in Areas of Specialization (2-5). Pr., 18 hours of appropriate subject matter and 36 hours of psychology and professional education.  
Advanced course devoted to a study of program, organization and development of basic and supplementary materials for guiding teachers, faculties, and school systems in the continuous improvement of curriculum and teaching practices.
654. Evaluation of Program in Areas of Specialization (2-5). Pr., 18 hours of appropriate subject matter and 36 hours of psychology and professional education.  
Evaluation and investigation of teaching effectiveness with attention also given to the utilization of human and material resources and the coordination of areas of specialization with the total school program and with other educational programs of the community.

Study in other teaching areas including art; dramatic arts; gifted; mental retardation; music; speech; speech correction; health, physical education and recreation; and industrial arts is available also to students in secondary education.

659-660. **Practicum in Area of Specialization (5-5).** Pr., Master's Degree or equivalent in Education and permission of major professor.

The practicum provides advanced graduate students with supervised experience with emphasis on the application of concepts, principles, and skills acquired in previous course work.

## Science

### Undergraduate

453. **Science and Modern Living (5).** Lec. 4, Lab. 2. Pr., junior standing.

Interpretative course stressing the relationship of science to problems of personal and social living in modern technological society. The critical role of science in democracy.

473. **General Science for Teachers (5).** Lec. 4, Lab. 2. Pr., junior standing.

Intended to give the teacher essential knowledge of such fields as earth science, meteorology, astronomy, nuclear energy, which constitute significant aspects of the general science program.

### Graduate

640-641. **Advanced Study of High School General Science.** Pr., SED 473.

Intensive study of selected topics from the area of the high school general science program.

For advanced courses in curriculum, school library science, higher education, and research and dissertation, see IED.

699. **Thesis Research.** (Credit to be arranged.) (May be taken more than one quarter.)

## Secretarial Administration (SA)

*Associate Professor Lamar*

*Assistant Professors D. Evans, F. Hale, and Waldo*

*Instructor Broten*

101. **Secretarial Science I (5).** Lec. and Lab. 10.

First of a series of four courses in which the student develops the ability to prepare mailable copy. Student begins the study of typewriting and Gregg system of shorthand. One hour per day is devoted to each. Primary emphasis is in the development of correct techniques in both skills. (Not open to students who have not had the equivalent of one unit of H.S. typing. Such students without typing should first take ST 111.)

102. **Secretarial Science II (5).** Lec. and Lab. 10. Pr., ST 101.

Continuation of ST 101.

111. **Business Typewriting (5).** Lab. 10. Not open to those with credit in ST 113 or who have one high school unit in typing.

For beginners, deals with elements of typewriting to gain facility in the preparation of letters and reports, typing from rough draft, tabulations, the cutting of stencils, and general typing.

113. **Personal Typewriting (3).** General elective. Lab. 6. Not open to those with credit in ST 111 or who have one high school unit in typing.

Introductory course designed for student who wishes to learn typewriting for personal use. Emphasis on touch control of keyboard, centering, appropriate styles for letters, and the preparation of reports. More time spent on the application of fundamentals than on speed.

200. **Filing (1).**

Methods and procedures of filing.

203. **Secretarial Science III (5).** Lec. and Lab. 10. Pr., ST 102.

Emphasis on developing production rate on jobs approximating those of a business office. Review of shorthand theory, building shorthand writing speed, and laying a foundation on which to build transcription skill.

204. **Secretarial Science IV (5).** Lec. and Lab. 10. Pr., ST 203.

Development of transcription ability through the fusion of skills in typewriting, reading shorthand, spelling, grammar, handling supplies, etc. Continuation of shorthand review and dictation speed.

300. **Secretarial Procedure (5).** Pr., ST 204 and junior standing.

Analysis of the secretarial profession stressing importance of personal factors, the responsibilities of the secretary, and the study of specialized duties. Related work assignments give practice in typical secretarial activities.

301. **Dictation (5).** Pr., ST 204 and junior standing.

Increased rate of dictation to 120 words per minute and further development of transcription speed.

302. **Office Machines (5).** Lab. 10. Pr., EC 211 or equivalent, and the ability to type at a reasonable speed.  
Course designed to give the student a working knowledge of various machines found in modern offices. Basic training in use of voice-writing, duplicating, adding, calculating, and posting machines.
303. **Advanced Office Machines (5).** Lab. 10. Pr., ST 302 or equivalent.  
Advanced training in use of office machines including addressing machines and a survey of the statistical and accounting applications of modern office equipment.
401. **Dictation (5).** Pr., ST 301 and junior standing.  
More difficult and technical dictation and transcription organized around several types of vocations.
402. **Office Apprenticeship (5).** Lab. 10. Pr., ST 300 and ST 301 and junior standing.  
Practical secretarial training. Student spends two hours each day working in an office to which he is assigned for actual office experience.

### Sociology (SY)

*Professor Hartwig  
Associate Professor Shields  
Assistant Professor Bliss  
Instructors French\* and Wright*

201. **Introduction to Sociology (5).** Pr., sophomore standing and qualified third quarter freshman with departmental approval.  
Principles and processes influencing the social life of man.
202. **Social Problems (5).** Pr., SY 201.  
Current social problems with special reference to the socially inadequate.
203. **Cultural Anthropology (5).** Pr., sophomore standing.  
Nature of culture, using materials taken from scientific studies of societies.
204. **Social Behavior (5).** Pr., SY 201 or PG 211.  
Integrated social-anthropological, biological and psychological factors which influence or determine human behavior; the emphasis is upon the normal average individual and/or group situations.
205. **Preparation for Marriage (3).** General elective. Open to freshmen with consent of instructor.  
Basic factors in dating courtship, mate selection and engagement in preparation for marriage and family living.
207. **Introductory Archaeology (5).** Pr., SY 201 or SY 203.  
Survey of the history, principles, and methods for investigating and reconstructing past cultures.
301. **Sociology of the Family (5).** Pr., SY 201 and junior standing.  
The family in contemporary society.
302. **Criminology (5).** Pr., SY 201 and junior standing.  
The causes of crime and its social treatment. Field trips required.
304. **Minority Groups (5).** Pr., junior standing.  
Racial composition of the United States with special emphasis upon the adjustment of minority groups to the culture.
307. **The Court and Penal Administration (3).** General elective.  
An analysis of the experience of the law breaker from arrest through the court and prison to the eventual return to society. Particular attention is paid to correction. To be offered in alternate years.
308. **Juvenile Delinquency (5).** Pr., SY 201.  
Survey of historical and contemporary considerations relative to the juvenile offender. The emphasis is upon research data from the various sciences attempting to deal with this problem.
309. **Social Thought (5).** Pr., junior standing and SY 201 or consent of instructor.  
Survey of significant social thought leading to the emergence of modern sociological theory.
310. **Social Organization (5).** Alternate years. Pr., SY 201 or consent of instructor.  
Structure and stratification of society with particular attention given to the contemporary scene.
311. **Technology and Social Change (3).** General elective. Pr., junior standing.  
Relationship between technological development and changes in modern society. Special emphasis is placed upon the human relations aspects of modern science. Designed primarily to meet social science needs of students in the fields of engineering, agriculture, education, and the physical sciences.

\* Temporary.

312. **Marriage Adjustments (3).** General elective. Pr., junior standing.  
Survey of emotional, social and biological factors in the family setting with emphasis upon adjustments of marriage and parenthood.
401. **Population Problems (5).** Pr., senior standing.  
Problems of quantity and quality of population including problems of composition, distribution and migration. Attention is given to Alabama population.
402. **Social Theory (5).** Pr., SY 201 or consent of instructor; senior or graduate standing.  
Survey of the range of contemporary social theory.
405. **Urban Sociology (5).** Pr., senior standing.  
Growth and decline of cities with special emphasis on ecological and demographic characteristics, associations and institutions, class systems, and housing and city planning.
406. **Introduction to Social Case Work (5).** Pr., senior standing.  
Development of social case work and a survey of modern social case work practice. Primarily for students entering the profession of social case work or related fields.
407. **Public Opinion and Propaganda (5).** Pr., junior standing, SY 201 and SY 204 or PG 330 or consent of instructor.  
Survey in the area of social communication; the formation, place and importance of publics in modern society, of public opinion research, and of propaganda and public relations techniques.
408. **Industrial Sociology (5).** Pr., junior standing, SY 201, and EC 442 or IM 306 or consent of instructor.  
Introductory survey of the sociological approach to business organization and industrial relations. Emphasis given to organization principles operative in the economic life within a social system such as a factory or business establishment.
409. **Sociology of Religion (5).** Pr., SY 201, senior standing, or consent of instructor.  
Analysis of religion as a social institution as found in the world's great religions. (To be offered in alternate years.)

## GRADUATE COURSES

602. **Seminar in the Family (5).** Pr., SY 301 or HE 304 or consent of instructor.  
Advanced study of the institutional nature of marriage and the family with particular emphasis upon the changing practices and notions in marital relationships as related to changes in the structure and functions of the family.
604. **Seminar in Race and Culture (5).** Pr., SY 201 and SY 304 or consent of instructor.  
Adjustment of races to culture with particular reference to the South; the historical and cultural background of the races in America; bi-racial system; problems of race relations.
650. **Sociology Seminar (5).** Pr., graduate standing or consent of instructor.  
Designed for students engaged in intensive study and analysis of sociological subject areas.
- NOTE: All 400 (except SY 406) and 600 level courses are available for a graduate minor in Sociology.

## Speech (SP)

Head Professor Davis

Professors Ranney and Smith

Associate Professor Hutchinson

Assistant Professors Gray, Green, Moore, and Sanders

Instructors Dorné<sup>a</sup>, Mattox, Phillips, and Rea

229. **Voice and Diction (5).** All quarters.  
Individual work in voice development and problems of pronunciation and articulation. Lectures in theory.
231. **Essentials of Public Speaking (5).** All quarters.  
Theory and practice of effective public speaking involving content, organization, language, voice and bodily action. Instruction in method of preparing and delivering of extemporaneous speeches and in the various means of making ideas effective. A special section offered for foreign students. (Credit in this course excludes credit in SP 305.)
235. **Interpretative Reading (5).** Fall, Spring.  
Teaching the student how to read aloud, to communicate ideas clearly, forcibly and interestingly from the printed page.
241. **Survey of the Bases of Speech (5).** Fall and Spring.  
Designed to acquaint the prospective speech major or minor with the fundamentals of speech, the psychological, sociological, and other bases.

<sup>a</sup> Temporary.

- 253. Group Leadership (3). All quarters. General elective.**  
Nature and functions of group leadership; the role of democratic leadership in organizing and conducting a group meeting to reach the aims of that group. Students gain leadership experience in class activities designed to help them learn and perfect democratic leadership techniques.
- 273. Group Discussion (5). All quarters.**  
Theory and practice in group problem solving through discussion. The values and limitations of discussion, the prerequisites of reaching agreement and a systematic approach to solving problems in group discussion. Special consideration given to leadership in problem solving.
- 280-1-2. Debate Workshop (1-1-1). All quarters.**  
Introduction to the study of the national debate question for beginning debaters interested in competition debate. Lecture and practical work.
- 283. Argumentation and Debate (5). Fall and Winter.**  
A study of debating techniques and procedures; their application to issues of current public interest; the gathering, organization, and presentation of facts, proofs, evidences.
- 285-6. Radio Workshop (3-3). All quarters.**  
Advanced and practical laboratory experience in presenting news, dramatic and variety type programs over local stations.
- 287-8. Television Workshop (3-3). All quarters.**  
Practical laboratory work in the field of television with experience in the local educational television studios working in all phases of the medium.
- 301. Phonetics (5).**  
Principles of phonetics and their application to speech.
- 305. Public Speaking (3). All quarters. General elective.**  
Designed to aid the student in preparing and delivering effective public speeches extemporaneously. Emphasis on narrative, expository, argumentative and motivational speeches. (Credit in this course excludes credit in SP 231.)
- 316. Parliamentary Procedure (3). All quarters. General elective.**  
Designed to aid the individual who may lead or participate in discussions or organizations where orderly procedure is needed. Theory and practice both employed.
- 321. The Speech and Hearing Mechanism (5).**  
Anatomy and physiology of the speech and hearing mechanism.
- 331. Advanced Public Speaking (5). Winter, Spring. Pr., SP 231 or 305, or by consent of instructor.**  
Structure, style, and delivery of various types of speeches for different occasions, speeches to inform, to persuade, and to entertain. Theory and study of current examples combined with practice.
- 334. Great American Speeches (3). All quarters. General elective.**  
Critical study and comparison of representative outstanding American speeches; the issues with which they were identified; their relation to the social scene.
- 337. Fundamentals of Radio and Television Broadcasting (5). Fall, Winter. Pr., SP 231 or 305 or consent of instructor.**  
To acquaint the student with the non-technical field, including announcing, programming, continuity and coordination of activities.
- 338. Modes of Film Communication (5). Spring.**  
Survey of the film industry's contribution to television and other forms of mass communication; an analysis of the styles and forms of film production as entertainment, communication, education and art.
- 340. Speech Reading (5).**  
Description and discussion of the major speech reading (lip reading) principles and theories; analysis of the patterns of instruction of children and adults; clinical practice.
- 341. Hearing Tests and Instruments (5).**  
Theory and practice of individual and group hearing tests; audio-metric instruments; clinical practice.
- 380-1-2. Debate Workshop (1-1-1). All quarters.**  
Advanced study of the national debate question for experienced debaters. Analysis of logical, ethical and emotional proofs in competition debate. Lecture and practical work.
- 411. Introduction to Problems in Hearing (5). Winter. Pr., junior standing.**  
Principles of auditory reception, the hearing mechanism, and the problems involved in measuring, evaluating, and conserving hearing.
- 420. Advanced Interpretation (5). Pr., SP 235 and junior standing.**  
Directed to develop skill in interpreting and communicating the meaning of literature.
- 431. Principles of Speech Correction (5). All quarters. Pr., junior standing.**  
Designed to enable students to learn how to identify speech defective cases and to learn various types of survey techniques. Clinical observation.

432. **Advanced Speech Correction (5).** Pr., junior standing, SP 431 or equivalent. Continuation of SP 431. Clinical practice.
437. **Advanced Radio Broadcasting (5).** Spring. Pr., junior standing and SP 337 or consent of instructor. Continuation of SP 337. Advanced course in announcing techniques, program organization, audience analysis, recording, sound effects, directing.
438. **Radio, Television and Film Writing (5).** Fall. Forms, techniques and types of writing as they apply to radio, television and films. Special emphasis will be placed on practical writing performance. Units will cover the writer's use of picture, sound and special production devices as they apply to the three media.
439. **Television in Education (5).** Winter. Uses, problems, potentialities and current developments in educational television; observation of and participation in the University educational television activities and productions.
441. **Hearing Pathology (5).** Pr., SP 411 or equivalent. Evaluation and rehabilitation of aural handicapped children and adults; hearing aids and auditory training; clinical practice.
442. **Persuasive Speaking (5).** Fall. Pr., junior standing and SP 231 or 305 or consent of instructor. Influencing individuals and audiences by means of spoken appeals. Salesmanship speaking. Analysis of forces which lead to belief and action. Practice in organizing and presenting such appeals.
473. **Advanced Discussion (5).** Spring, Summer. Pr., junior standing and SP 273 or consent of instructor. Study and practice in the theory and organization of discussion and conference groups including the individual speakers. Primarily for persons who work with groups, e.g., teachers, county agents, home demonstration agents, athletic directors, industrial coordinators.
483. **Advanced Argumentation and Debate (5).** Pr., junior standing and SP 283 or consent of instructor. Function of argumentation and debate in a democracy and its application of principles of logic and evidence in past and present public speaking and debating.

## GRADUATE COURSES

601. **Introduction to Graduate Study in Speech (5).** Nature and methods in graduate study in speech; exploration of areas in which research is needed; resources available; methods of research in speech; structuring the research problem; presenting the results of research in speech.
607. **Independent Study (1-5).** (Course may be repeated not to exceed 10 hours credit.) A. Public address; B. Interpretation; C. Radio and Television; D. Group Methods; E. Speech Pathology; F. Audiology. Conferences, readings, research, and reports in one of the listed areas.
610. **Rhetorical Theory and Criticism (5).** A. Ancient; B. Medieval to 19th Century; C. 19th and 20th Centuries. Studies of the historical development of theories, men and movements pertaining to rhetoric and rhetorical criticism in the periods indicated.
620. **The History and Theory of Interpretation (5).** Growth and change of psychological and philosophical theories and methods of creative, artistic, and oral reading.
630. **Studies in Radio, Television and Film (5).** Combined media and their relationship with speech and communication.
632. **Clinical Methodology (5).** Pr., SP 431, 432 or equivalent. Principal methodologies and techniques currently employed in the management of the disorders of speech. Clinical practice.
- 650-1. **Speech Pathology I and II (5-5).** Pr., SP 431 and 432 or equivalent. Advanced studies dealing with disorders of Speech. Materials may be selected from cerebral disturbances (ophasis and cerebral palsy), palatolaryngeal disturbances (esophageal and cleft palate), voice disorders, stuttering, articulation disorders (including dialect), delayed development of speech, and other appropriate areas.
655. **Clinical Problems in Speech (1-3).** Pr., SP 431, 432 or equivalent. The course may be repeated. Methods, techniques, and clinical management of the disorders of speech. Clinical practice required.
- 660-1-2. **Audiology I-II-III (5-5-5).** Pr., SP 441, 411 or equivalent. Advanced studies dealing with the disorders of hearing. Materials drawn from: A. speech reading; B. auditory training; C. hearing testing and measurement; D. child and adult rehabilitation; E. hearing aids and hearing aid evaluation; F. education of the deaf and others.



665. **Clinical Problems in Hearing (1-3).** Pr., SP 441, 411 or equivalent. The course may be repeated. Methods, techniques, and clinical management of the disorders of hearing. Clinical practice required.
673. **Seminar in Discussion (5).** Pr., SP 273 or equivalent. Group problem solving through discussion. Includes the survey of published experimental work in discussion and considers the values and limitations of discussion as tools of the democratic leader. Special attention is paid the application of discussion to problems in education, business, industry and agriculture.
678. **Seminar in Debate (1-5).** (May be repeated not to exceed 5 hours credit.) Psychological concepts of argument. Techniques and methods employed in argumentative discourse. Critical analysis of selected controversies and a survey of published experimental work in debate.
699. **Thesis (Credit to be arranged).**

## Textile Technology (TT)

*Head Professor Adams*  
*Professors Knight and Waters*  
*Associate Professor Herron*  
*Assistant Professor Phillips*

101. **Introduction To Textiles (1).** Orientation course for freshmen which briefly introduces all branches of the textile industry.
210. **Fiber Processing (5).** Lec. 4, Lab. 3. Construction and operation of equipment for opening, cleaning, blending, picking, carding, combing, drawing; adaptation of these processes to synthetics and wool; calculations necessary for the planning and operation of this equipment.
211. **Yarn Manufacture I (5).** Lec. 4, Lab. 3. Construction and operation of roving and spinning equipment for cotton, wool, and synthetics; long draft systems and special drafting, systems for blends, etc.
220. **Weaving and Designing I (5).** Lec. 4, Lab. 3. Automatic cam loom mechanism with designing of fabrics made on these looms.
221. **Fabric Production and Design (5).** Lec. 4, Lab. 3. Design, construction and production of fabrics; fibers and yarn production methods. Not available to students enrolled in Textile Curricula.
301. **Applied Textiles (3).** Pr., sophomore standing. Textiles from raw material to finished fabric, including natural and man-made fibers.
305. **Fiber Technology (3).** Lec. 2, Lab. 3. Pr., sophomore standing. Origin, characteristics, and properties of the various textile fibers, both natural and man-made; fiber microscopy.
307. **Bleaching and Dyeing (5).** Lec. 4, Lab. 3. Bleaching, dyeing and finishing of natural and man-made fiber fabrics; all types of dyes for textiles, their application and fastness.
317. **Dyeing and Finishing (5).** Lec. 4, Lab. 3. Pr., TT 307. Plant application methods and plant problems in dyeing, finishing and printing of natural and man-made fibers.
319. **Chemical Testing (2).** Lec. 1, Lab. 3. Pr., junior standing. Procedures and laboratory work on all types of textile tests of a chemical nature; analysis of textile chemicals.
320. **Weaving and Designing II (5).** Lec. 4, Lab. 3. Pr., TT 220. Dobby and multibox operation, pattern planning, and designs applicable to dobbie and box looms.
321. **Weaving and Designing III (5).** Lec. 4, Lab. 3. Pr., TT 320. Special weaving attachments, and production of specialty fabrics. Weaving mill organization. Fabric identification.
322. **Yarn Manufacture II (5).** Lec. 4, Lab. 3. Pr., TT 210 and TT 211. Methods of obtaining higher quality yarns; yarn production planning; practical manufacturing problems; yarn mill machinery layout and labor organization.
324. **Physical Testing (3).** Lec. 2, Lab. 3. Pr., junior standing. Testing procedures, laboratory use of textile testing equipment and interpretation of data.
405. **Warp Preparation (5).** Lec. 4, Lab. 3. Pr., junior standing. Preparation of warp yarn for weaving.
406. **Textile Costing (5).** Pr., junior standing. Basic principles for figuring textile production costs; allocation of costs; fabric cost sheet; marketing costs.

412. **Textile Management (3). Pr., junior standing.**  
Analysis of management problems in textile industry including policy determination, job analysis, work loads, training, organization, plant layout, etc.
417. **Textile Microscopy (5). Lec. 3, Lab. 6. Pr., PS 202 and senior standing.**  
Optical and microscopical analysis of textile fibers, yarns, and fabrics; special applications of photomicrography and polariscopic analysis.
418. **Jacquard Weaving and Design (2). Lec. 1, Lab. 3. Pr., TT 220 and junior standing.**  
Jacquard mechanism and design of original patterns for jacquard loom.
424. **Man-Made Fibers I (5). Pr., junior standing.**  
Manufacturing and processing.
425. **Man-Made Fibers II (5). Pr., TT 422.**  
Technological aspects, usage, considerations in the employment of man-made and natural fibers and blends.
431. **Fabric Analysis (3). Lec. 2, Lab. 3. Pr., TT 320.**  
Analysis of fabric structure and determination of specifications.
432. **Finishing and Printing (5). Lec. 4, Lab. 3. TT 317 and CH 316.**  
Chemical study of textile finishes and their application, printing equipment and methods, printing paste preparation, etc.

### **Vocational, Technical, and Practical Arts Education (VED)**

*Head Professor Montgomery  
Associate Professors Bottoms and Pruett  
Assistant Professors Baker and Dawson*

- 102-3-4. **Orientation: Personal and Professional (1-1-1).**  
Designed to help freshmen achieve optimum personal, social, and intellectual development as college students and to assist in planning professional careers. (Students sectioned by area of specialization.)
246. **Instructional Drawing (3). Lab. 6.**  
Preparing for the shop laboratory, including making freehand and pictorial sketches and drawings, reading working drawings, blue prints, manufacturers guides, and lettering, use of instruments, dimensioning, making models, floor plans, bills for materials, writing specifications, and developing working plans.
346. **Vocational and Practical Arts Education (3).**  
Ways of studying occupational needs and developing and operating local program of vocational and practical arts education.
405. **The School Shop (5). Lec. 2, Lab. 6.**  
Organization and management of the school shop; methods and materials integrated with the study of jobs and problems basic to industrial arts and agricultural education.
406. **Farm and Home Construction and Maintenance (5). Lec. 2, Lab. 6.**  
Teaching procedures and abilities needed for teaching such jobs and problems as elementary scale drawing and plan reading; farmstead layout, functional requirements of farm houses, shelter, and storage, water system; septic tank and sewage disposal; heating, concrete work, and painting.
407. **Practicum in Electricity (5). Lec. 2, Lab. 6.**  
Teaching the utilization of electricity in the home, school and community enterprises; selection, installation, operation and maintenance of electrical equipment; electrical devices for school and community exhibits. Field assignments will be made.
414. **Teaching in Industrial Arts in Elementary and Secondary Schools (3). Lec. 2, Lab. 2. Pr., 9 hours Psychology, FED 200 or equivalent; Pr., or coreq., FED 300 or equivalent.**
423. **Program in Industrial Arts in Elementary and Secondary Schools (3). Lec. 2, Lab. 2. Pr., 9 hours of Psychology, FED 200 or equivalent; Pr., or coreq., FED 300 or equivalent.**

Undergraduate students with a major in industrial arts will pursue a minor selected from some other teaching area in the secondary school program or in one of the areas included in the twelve-grade program. (For appropriate course or courses in Teaching or Program, see SED, IED, and PE.)

425. **Student Teaching (10 or 15). Lec. 5, Lab. 20. Pr., 9 hours of Psychology, FED 200 or equivalent; FED 300 or equivalent, two courses in Teaching and Program, and junior or senior standing.**  
(T) Industrial Arts in Elementary and Secondary Schools, (U) Agricultural Education.

- 446. Teaching Agriculture (5).**  
Methods and procedures in the teaching of agriculture.
- 456. Teaching Materials in Agricultural Education (3).** Lec. 2, Lab. 3.  
Selection, preparation and use of materials in teaching vocational agriculture.
- 466. Teaching Out-of-School Groups (5).**  
Conducting young farmer and adult classes and working with community groups in such procedures as community study, promotional and organizational procedures, teaching groups, and on-farm instruction.

### Advanced Undergraduate and Graduate

- 408. Teaching Farm Mechanics (5).** Lec. 3, Lab. 4. Pr., junior standing.  
Objectives and methods; equipment and management of farm shop; organization of projects; recent developments in farm mechanics; in-service teaching problems. Students plan and demonstrate methods of teaching mechanical skills.
- 485. Audio-Visual Materials (5).** Lec. 4, Lab. 2. Pr., junior standing.  
Examination and evaluation of films, filmstrips, slides, exhibits, charts, maps, globes, recordings, radio, educational television and programmed materials. Attention given to contributions of audio-visual materials to the elementary and secondary school curriculum, to sources of audio-visual materials, and to operation, care and housing of necessary equipment.

### Graduate

- 602. Teacher Education in Vocational and Practical Arts (5).** Pr., departmental approval.  
Designed for supervisors of student teachers, teacher educators, and other graduate students. Major emphases deal with administration of vocational education programs, research, problems which supervising teachers encounter in the student teaching program.
- 603. Problems in Agricultural Occupations (5).** Pr., departmental approval.  
Securing, organizing and interpreting information for guidance and teaching purposes; curriculum development; developing instruction units and planning teaching activities for on-farm and off-farm occupations.
- 604. Organization and Administration of Adult Education (5).** Pr., departmental approval.  
History, philosophy, and needs for adult education; nature of adult learning; procedures in organizing adult groups; and administration of adult education programs.
- 606. Programs, Materials and Methods in Adult Education (5).** Pr., departmental approval.  
Analysis of programs in adult education including public school general adult education, adult farmer education programs conducted by various agencies, and adult programs in community colleges and trades schools; materials and methods appropriate in teaching various age groups.
- 607. Seminar in Research in Agricultural Education (4).**  
Review and criticism of contributions of research in agricultural education; using research in solving current problems; needs for additional research; planning of a comprehensive study or completion of a small study.
- 608. Administration of Vocational and Practical Arts Education (5).** Pr., departmental approval.  
Designed to prepare junior college personnel, public school administrators, counselors and teachers for relating current social demands to vocational, technical and practical arts programs in schools. Content includes philosophy, procedures in organization and administration, and changing socio-economic conditions requiring constant adjustments of programs.
- 609. Selection, Creation and Use of Audio-Visual Materials (5).** Lec. 3, Lab. 4. Pr., VED 485 or consent of instructor.  
Selection and use of various materials for specific educational purposes and the production of materials as learning experiences. Skills and techniques used in the production of graphic materials, analysis of the effectiveness of various materials, and factors involved in developing a desirable audio-visual aids program for a school system.
- 646. Studies in Education (1-3).** Pr., one quarter of graduate study.  
Study of a problem using research techniques, to be selected in consultation with the supervising professor. A problem should be selected which will contribute to the program of the student. (Credit in ED 651 prior to 1960 excludes credit in this course.)

The following courses are organized and taught on a twelve-grade basis:

- 651. Research Studies in Industrial Arts in Elementary and Secondary Schools (5).** Pr., 18 hours of appropriate subject matter and 36 hours of psychology and professional education.  
Review, analysis, and interpretation of available research with emphasis on designing new research to meet the changing needs of the school.

652. Curriculum and Teaching in Industrial Arts in Elementary and Secondary Schools (5). Pr., 18 hours of appropriate subject matter and 36 hours of psychology and professional education.  
Critical study of teaching practices and reappraisal of selecting experiences and content for curriculum improvement.
654. Evaluation of Program in Industrial Arts in Elementary and Secondary Schools (2-5). Pr., 18 hours of appropriate subject matter and 36 hours of psychology and professional education.  
Evaluation and investigation of teaching effectiveness with attention also given to the utilization of human and material resources and the coordination of areas of specialization with the total school program and with other educational programs of the community.
- 659-660. Practicum in Area of Specialization (5-5). Pr., Master's Degree or equivalent, and permission of major professor.  
Provides advanced graduate students with supervised experience with emphasis on the application of concepts, principles, and skills acquired in previous course work.
699. Thesis Research. (Credit to be arranged.) (May be taken more than one quarter.)

### Veterinary Medicine (YM)

#### Anatomy and Histology

Head Professor Fitzgerald

Associate Professor Whiteford\*

Assistant Professors Few, Holloway, and James

Technician Dennis

#### Bacteriology

Head Professor Neal

Associate Professors Attleberger\* and Crawford\*

Assistant Professors Cody and Miller

Instructors Alford, Feldman, and Wilt

Technician Summers

#### Pathology and Parasitology

Professor Roberts

Research Professor Bailey

Associate Professors Groth\* and Hoff\*\*

Assistant Professors Diamond and Teer

Instructors Barnhart and Eubank

Research Associate Cabrera

Technicians Coleman, Eaves, and McConnell

#### Physiology and Pharmacology

Head Professor Clark

Professor Burns

Associate Professors Alexander and Woodley

Assistant Professor Robertson

Technician Bickhart

#### Large Animal Surgery and Medicine

Head Professor Schell

Professors Gibbons and Wiggins

Associate Professors Geary, Walker, and Winkler

Assistant Professors Vaughan and Williams

#### Small Animal Surgery and Medicine

Head Professor Hoerlein

Professor Heath

Associate Professors Geary and Horne

Instructors Albert and Widdowson

Research Assistant Oliver

\* On leave

\*\* Acting head

- 200. General Microbiology (5).** Lec. 3, Lab. 4. Fall, Winter, Spring. Pr., General and Organic Chemistry.  
Fundamentals of microbiology including history of microbiology, morphology, metabolism, classification, identification, cultivation, and distribution of bacteria, viruses, yeasts, and molds; also an introduction to applied microbiology.
- 204. Pathogenic Microbiology (5).** Lec. 3, Lab. 4. Fall, Winter, Summer. Pr., General Microbiology.  
Microorganisms pathogenic to man and animals. Immunity to, and laboratory diagnosis of, diseases caused by microorganisms.
- 210. Human Physiology (5).** Lec. 3, Lab. 4. All quarters.  
Functions and manner of operation of the body and its parts, with special emphasis on digestion, circulation and reproduction. Laboratory exercises illustrate the functions of the various organ systems of the body.
- 220. Human Anatomy and Physiology (5).** Lec. 3, Lab. 4. Fall and Winter. Pr., ZY 102.  
For students in Laboratory Technology and others who are qualified. Human skeletal, muscular and nervous systems. Human models, cats and frogs are used in laboratory to supplement lecture material.
- 221. Human Anatomy and Physiology (5).** Lec. 3, Lab. 4. Winter and Spring. Pr., ZY 102 and VM 220.  
Continuation of VM 220. Those aspects of anatomy and physiology that are related to the heart, circulation, blood, digestion, metabolism, kidney, respiration, endocrines and reproduction.
- 311. General Bacteriology (5).** Lec. 3, Lab. 4. Winter and Summer.  
For students in Home Economics. Elementary bacteriology as applied to foods, industry and home sanitation.
- 320. Anatomy (5).** Lec. 2, Lab. 10. Fall.  
Gross anatomy of domestic animals.
- 321. Anatomy (5).** Lec. 2, Lab. 10. Winter. Pr., VM 320.  
Continuation of VM 320. Myology, splanchnology, angiology and neurology are emphasized.
- 322. Anatomy (5).** Lec. 2, Lab. 10. Spring. Pr., VM 321.  
Continuation of VM 321. The latter half is devoted to the anatomy of domestic fowl and swine.
- 324. Veterinary Genetics (3).** Spring.  
Basic principles of genetics with special reference to those anatomical and metabolic defects associated with inherited diseases of domestic animals.
- 326. Histology (5).** Lec. 2, Lab. 6. Fall.  
Microscopic anatomy of the form, structure, and characteristics of basic animal tissues.
- 327. Organology (5).** Lec. 2, Lab. 6. Winter. Pr., VM 326.  
Continuation of VM 326. Microscopic anatomy of the tissue composition of organs and organ systems.
- 328. Embryology (5).** Lec. 2, Lab. 6. Spring. Pr., VM 327.  
Formation and early development of the embryos of domestic animals. Fetal membranes and placentation are emphasized.
- 329. Veterinary Physiology (3).** Winter.  
Functions of the muscular, nervous and respiratory systems.
- 330. General Microbiology (5).** Lec. 3, Lab. 4. Fall.  
Fundamentals of microbiology for students in veterinary medicine. Presents the biology and technical procedures used in the identification of microorganisms other than the protozoa.
- 331. Infection and Immunity (5).** Lec. 3, Lab. 4. Winter. Pr., VM 330 or equivalent.  
Sources and mechanisms of infection, principles of immunology and biological therapy. It includes a study of the body defenses against infection and serological techniques such as agglutination, precipitation, and hypersensitization tests.
- 333-334. Zootechnics (3-2).** Lec. 2, Lab. 4: Lec. 2. Fall and Spring.  
Designed to acquaint veterinary students with the feeding, management, handling, training, and showing of farm and pet animals.
- 336. Veterinary Physiology (5).** Lec. 4, Lab. 3. Spring.  
Endocrine and reproductive systems of domestic animals.
- 421. Animal Physiology (5).** Winter.  
Physiology of the farm animals with special emphasis on digestion, endocrinology and reproduction.
- 422. Animal Disease Control (5).** Spring. Pr., VM 421 and General Microbiology.  
Herd management and practices proven to be of value in the prevention and control of the important diseases of farm animals.

- 436-437-438. **Pharmacology (5-3-5). Lec. 3, Lab. 4. Fall, Winter and Spring.**  
Pharmacodynamics, posology, and therapeutics of drugs with veterinary application. Drugs are designated by U.S.P., generic, and proprietary names.
443. **Veterinary Physiology (5). Lec. 3, Lab. 6. Fall.**  
Digestion and metabolism as well as laboratory tests used in veterinary medicine.
444. **Veterinary Physiology (5). Lec. 3, Lab. 6. Winter.**  
Detailed study of renal physiology, electrocardiography, blood and circulation.
450. **General Pathology (5). Lec. 3, Lab. 4. Fall. Pr., VM 326-327-328.**  
Disturbances in the metabolism of proteins, carbohydrates, fats and minerals; circulatory disturbances; inflammation and repair of damaged tissue; disturbances in the growth and differentiation of cells; and the pathology of tumors. Relations of these changes to the understanding and diagnosis of diseases of animals.
451. **Systemic and Special Pathology (5). Lec. 3, Lab. 4. Winter. Pr., VM 450.**  
Discussion and laboratory demonstration of the changes caused by important infections, nutritional, toxic and metabolic diseases of animals. Gross and microscopic criteria on which definite diagnosis is based with respect to manifestations in organs and systems is emphasized.
452. **Clinical Pathology (3). Lec. 1, Lab. 6. Spring. Pr., VM 451.**  
Clinical laboratory methods of collecting, preserving and examining urine, blood, and other body fluids are emphasized. Lectures devoted primarily to the application and interpretation of the results as an aid to formulating a diagnosis or prognosis.
453. **Systemic and Special Pathology (2). Lec. 1, Lab. 2. Spring. Pr., VM 451.**  
Continuation of VM 451.
456. **Veterinary Parasitology (3). Lec. 2, Lab. 2. Fall.**  
Introduction to the science of parasitology. Individual parasites of the ruminants are studied. Emphasis is placed on the morphology and bionomics of the parasites.
457. **Veterinary Parasitology (5). Lec. 3, Lab. 4. Winter. Pr., VM 456.**  
Continuation of VM 456. Internal parasites of swine, equine, dogs, cats, and poultry are covered.
458. **Veterinary Parasitology (3). Lec. 2, Lab. 2. Spring. Pr., VM 457.**  
Important ectoparasites of the domestic animals, with emphasis placed on the items listed in VM 456 for the endoparasites.
461. **Pathogenic Microbiology (5). Lec. 3, Lab. 4. Spring. Pr., VM 331 or equivalent.**  
Systematic study of bacteria, viruses, yeasts and molds of importance in diseases of domestic animals. Methods of isolation, and biological measures for control of these diseases.
- 500-501-502. **Veterinary Medicine (5-5-5). Fall, Winter and Spring.**  
Detailed study of the etiology, symptoms, pathogenesis, diagnosis, treatment and prevention of the medical diseases affecting the various systems and organs of the equine, bovine, ovine and porcine species.
503. **General Surgery (3). Winter.**  
Background of surgery; major surgical injuries—wounds, fluid loss and infection; preoperative and postoperative care; surgical technique; anesthesia; and extirpative, reconstructive and physiologic surgery.
504. **Large Animal Surgery (5). Spring.**  
The special surgical diseases of the domestic farm animals including surgery of the alimentary canal, the chest and abdomen, the respiratory and cardiovascular systems, the eye and ear, the genito-urinary tract, and the feet and limbs.
508. **Large Animal Clinic (1). Lec. 4. Spring.**  
Clinical conferences and laboratory exercises consisting of practice in diagnosis, therapy and post-mortem.
510. **Small Animal Medicine (5). Fall.**  
Consideration of the systemic, noninfectious, and parasitic diseases of the small domestic animals.
512. **Small Animal Surgery (5). Lec. 3, Lab. 6. Spring.**  
Lecture—specific basic surgical techniques. Laboratory—performance of basic surgical operations on anesthetized animals owned by the college.
518. **Small Animal Clinic (1). Lab. 4. Spring.**  
Clinical conferences and laboratory exercises consisting of practice in diagnosis, therapy and post-mortem.
519. **Small Animal Medicine (3). Spring. Pr., VM 510.**  
Continuation of VM 510. Detailed consideration to differential diagnoses of diseases of small domestic animals.
521. **Milk Sanitation (5). Lec. 4, Lab. 2. Winter. Pr., VM 461.**  
Public Health requirements for sanitary milk production and a study of zoonotic diseases.



- 526-27. Physical Diagnosis and Clinical Technics (2-2). Lec. 1, Lab. 4. Fall and Winter.**  
Demonstration and practice of methods employed in physical diagnosis, handling, restraint and administration of therapeutic agents to farm and small animals.
- 528. Applied Anatomy (2). Lec. 1, Lab. 2. Fall.**  
Those aspects of anatomy related to diagnostic, obstetrical and surgical procedures.
- 530. Radiology and Radiation Biology (5). Lec. 3, Lab. 4. Winter.**  
Fundamentals of radiology, diagnostic radiology, characteristics of radioactivity, tracer studies and the biological effects of ionizing radiation.
- 531-551-552. Jurisprudence and Ethics (1-1-1). Winter, Summer.**  
Laws relating to duties of the veterinarian to the public and to his clients, his liabilities, rights, collection of fees, etc. Ethics as applied to the veterinary profession.
- 553. Special Anatomy (1 to 5). Hours and credit to be arranged. Pr., VM 320.**  
Elective course in which any phase of anatomy of domestic animals related to the anticipated field of specialization may be studied.
- 554. Veterinary Medicine (3). Summer.**  
Study and identification of the poisonous plants of the Southeastern states as well as their characteristic symptoms, lesions and treatment.
- 555-556. Infectious Diseases (5-5). Fall and Winter.**  
Principal infectious diseases of the large domestic animals. Epizootiology, etiology, symptoms, diagnosis and prevention of diseases, including immunization and sanitation.
- 557. Applied Anatomy (1). Lab. 2. Summer.**  
Aspects of anatomy which are related to diagnostic, obstetrical and surgical procedures.
- 558. Applied Anatomy (1). Winter.**  
Aspects of anatomy which are related to diagnostic, obstetrical and surgical procedures.
- 560. Obstetrics (5). Summer.**  
Normal and abnormal conditions connected with reproduction in domestic animals. Methods of diagnosis and treatment of sterility in both male and female, and methods of artificial insemination.
- 561. Veterinary Medicine (5). Fall.**  
Methods of diagnosis, post-mortem findings, and treatment of common chemical and venom poisoning of farm animals and pets.
- 562-563-564. Large Animal Surgical and Obstetrical Exercises (1-1-1). Lab. 2. Summer, Fall, and Winter.**  
Demonstrations and practical application of surgical and obstetrical procedures on farm animals.
- 566-567-568. Large Animal Clinic (2-2-2). Lab. 8. Summer, Fall, and Winter.**  
Clinical conferences and laboratory exercises consisting of practice in diagnosis, therapy and post-mortem.
- 572-573-574. Small Animal Surgical Exercises (1-1-1). Lab. 2. Summer, Fall, and Winter.**  
Detailed consideration and performance of advanced small animal surgery.
- 575. Meat Sanitation (5). Summer. Pr., VM 452, 458, and 461.**  
Ante-mortem and post-mortem inspection of animals slaughtered for food; interpretation of regulations governing the disposition of carcasses showing pathological conditions; construction of abattoirs for small towns.
- 576-577-578. Small Animal Clinic (2-2-2). Lab. 8. Summer, Fall, and Winter.**  
Clinical conferences and laboratory exercises consisting of practice in diagnosis, therapy and post-mortem.
- 582. Seminar (3). Winter.**  
Literature reviews or research problems selected by the student. Papers written and oral presentation given before his class and faculty.
- 588. Veterinary Medicine (5). Winter.**  
Special emphasis on the newer aspects of diseases of metabolism and the nutritional diseases of farm animals. Includes diseases of swine and sheep.
- 592. Internship (0). Spring. Non-credit required course.**  
Completion of satisfactory internship during the spring quarter with reputable veterinary practitioner required for graduation.

#### GRADUATE COURSES

- 414. Techniques in Bacteriology (5). Pr., VM 461 or equivalent and junior standing. Any quarter by arrangement.**  
Advanced techniques used in bacteriology, pertaining to isolation, cultivation and identification of microorganisms. (Course limited to five students.)

418. **General Pathology (5).** Lec. 3, Lab. 4. Fall. Pr., satisfactory courses in histology and physiology.  
Fundamental alterations of disease, adapted for especially qualified graduate students. (Not available for candidates for M.S. in Veterinary Medicine.)
425. **Intermediate Human Physiology (5).** Lec. 4, Lab. 2. Fall by arrangement. Pr., VM 210 or its equivalent and junior standing.  
For advanced students in home economics, education and others who are qualified. A detailed study of the physiology of the various organs of the body. (Not available for candidates for M.S. in Veterinary Medicine.)
441. **Physiological Function Tests and Laboratory Diagnosis (5).** Lec. 4, Lab. 3. Any quarter by arrangement. Pr., permission of the instructor, acceptable courses in physiology, and junior standing.  
Chemical, photometric, and enzymatic procedures used in diagnosis of abnormal body functions. Included are function tests for the thyroid, liver, kidney, heart, pancreas, etc.
460. **Histological Techniques (2 to 5).** Hours and credit to be arranged. Pr., VM 326 or equivalent and junior standing.  
Techniques employed in the preparation of cytological and histological materials.
462. **Microbial Physiology (5).** Lec. 2, Lab. 6. Pr., VM 200 or other satisfactory courses in microbiology and senior standing. By arrangement.  
Metabolic changes occurring within microorganisms, metabolites which are produced and actions on inorganic substances, nitrogenous compounds, citric acid, carbohydrates, etc. Microbial growth, biosynthesis and adaptation. Laboratory will stress qualitative and to a limited extent evidence of quantitative metabolic phenomena. (Available to especially qualified students in other schools as well as to candidates for M.S. in Veterinary Medicine.)
465. **Special Techniques in Histopathology (3).** Lab. 9. Pr., VM 453, VM 460. Any quarter by arrangement.  
Special stains and techniques of histochemistry employed in the preparation of materials for histopathologic study.
467. **Gross Pathology (2).** Lab. 6. Pr., VM 453, junior standing and permission of instructor. Any quarter by arrangement.  
Regular participation in autopsy examinations under supervision of senior staff members. Designed to give the graduate student experience in autopsy procedures and in diagnostic interpretation of gross lesions. (Required of all majors and minors in Pathology.)
470. **Health Physics (5).** Lec. 4, Lab. 3. Fall. Pr., permission of instructor. (Designed for students in biological and physical sciences who might use radioactive nuclides in their respective professions.)  
Fundamental principles of radioactivity, instrumentation for detecting and monitoring radioactive nuclides; radiation effects on man; permissible radiation dosages; safe handling of radioactive substances; and shielding from various radiations.
480. **Radiological Techniques (5).** Lec. 3, Lab. 4. Any quarter by arrangement.  
Radiographic techniques including assignments on basic radiation physics.
- 601-602. **Advanced Pathogenic Microbiology (5-5).** Lec. 2, Lab. 6. Any quarter by arrangement. Pr., acceptable courses in microbiology and immunology.  
Identification of pathogenic microorganisms and their relationship to animal diseases.
- 604-605. **Immunology (5-5).** Lec. 2, Lab. 6. Pr., VM 461 or equivalent. Spring quarter by arrangement.  
Immunizing agents, methods of establishing immunity, and techniques for demonstrating various types of immunity and antigen-antibody reactions. The work may be arranged to meet the particular interest of the student.
606. **Virus and Rickettsiae (5).** Lec. 2, Lab. 6. Any quarter by arrangement. Pr., acceptable courses in bacteriology and immunology.  
Nature, activities and methods of cultivation of viruses and rickettsiae; their relation to bacteria, plants and animals.
609. **Clinical Mycology (5).** Lec. 2, Lab. 6. Any quarter by arrangement. Pr., permission of the instructor and acceptable courses in bacteriology.  
Methods and techniques used in isolating and propagating yeasts, molds and actinomycetes pathogenic for animals. Laboratory diagnosis of fungus infections in animals.
611. **Advanced Pathology (5).** Lec. 2, Lab. 6. Pr., VM 453 or equivalent. Spring or Summer.  
Systemic and special pathology.
613. **Diagnostic Histopathology (1-5).** Hours and credit to be arranged. Pr., VM 465. Any quarter by arrangement.  
Histopathology of diseases of domestic, wild and zoo animals. Appropriate material submitted for histopathologic diagnosis under the supervision of the pathologists.
615. **Oncology (5).** Lec. 1, Lab. 8. Pr., VM 465. Any quarter by arrangement.  
The gross and microscopic pathology of the neoplasms of the domestic animals.

- 621-622. Advanced Anatomy (5-5). Lec. 2, Lab. 9. Pr., permission of instructor. Any quarter by arrangement.  
A. Cardio-vascular Anatomy. B. Anatomy of the Uro-genital System. C. Neuroanatomy. D. The Anatomy of the Locomotor System, and E. The Anatomy of the Special Senses.
624. Experimental Neuroanatomy (5). Lec. 2, Lab. 9. Pr., VM 621-622 (C) Neuroanatomy. Any quarter by arrangement.  
Results of especially oriented experimental lesions of the central nervous system employing the Horsley-Clark stereotaxic instrument.
- 625-626. Advanced Histology of Domestic Animals (5-5). Lec. 2, Lab. 9. Any quarter by arrangement.  
Special phases of the microscopic structure of animal tissues and organs.
631. Advanced Pathological Physiology (5). Any quarter by arrangement. Pr., permission of the instructor and acceptable courses in physiology.  
The physiological response of the body to disease. An attempt to explain the signs and symptoms of diseases based on physiological principles. Diseases discussed will be those of the liver, kidney and digestive systems.
632. Advanced Pathological Physiology (5). Lec. 4, Lab. 3. Any quarter by arrangement. Pr., permission of the instructor.  
Physiological explanation of abnormalities of the reproductive and endocrine systems.
633. Advanced Pathological Physiology (5). Lec. 4, Lab. 3. Any quarter by arrangement. Pr., permission of instructor.  
Abnormalities of the nervous system which lend themselves to a physiological explanation.
- 635-636. Advanced Veterinary Pharmacology (5-5). Lec. 3, Lab. 4. Any quarter by arrangement. Pr., VM 436, VM 437, VM 438.  
Pharmacology of some of the more important drugs used in veterinary medicine. In the laboratory, students will have an opportunity to determine the pharmacology of the drugs on the horse, cow, pig, and dog.
638. Digestive Processes in Domestic Mammals (5). Any quarter by arrangement. Pr., VM 421 or its equivalent.  
Enzymatic and bacterial digestion as well as the motility of the gastro-intestinal tract in farm animals.
639. Small Animal Nutrition (5). Lec. 4, Lab. 3. Any quarter by arrangement. Pr., permission of the instructor and acceptable courses in physiology.  
Requirement of amino acids, fats, carbohydrates, minerals and vitamins for dogs, cats and other small animals. Nutritional antagonists and symptoms of nutritional deficiencies in the animals.
643. Veterinary Radiation Biology (5). Lec. 4, Lab. 3. Any quarter by arrangement. Pr., permission of the instructor and acceptable courses in chemistry and animal physiology.  
Instruments used for radiation detection, isotope techniques, and diagnostic tests used in animals, and the effects of radiation on animal tissues. Isotopes will be primarily gamma emitters.
645. Electrocardiology and Blood Vascular Physiology (5). Any quarter by arrangement. Pr., permission of instructor and acceptable courses in physiology.  
Physiology of the blood vascular system and the advanced techniques used in electrocardiology.
647. Canine Neurosurgery (5). Lec. 2, Lab. 6. Any quarter by arrangement. Pr., permission of the instructor.  
Applied anatomy, physiology, physical and radiographic diagnosis, and surgical correction of lesions (especially those of traumatic origin) affecting the nervous system of the dog.
- 651-652. Advanced Large Animal Surgery (5-5). Lec. 1, Lab. 8. Any quarter by arrangement.  
Research in surgery. Advanced techniques for surgical procedures in domestic animals.
- 654-655. Advanced Large Animal Medicine (5-5). Lec. 1, Lab. 8. Any quarter by arrangement.  
Special study of the causes, methods of diagnosis, treatment and methods of control and eradication of selected non-surgical diseases of domestic animals.
- 657-658. Breeding Diseases of Animals (5-5). Any quarter by arrangement.  
Graduate study of fertility in domesticated animals, but particularly, investigation into the etiology, pathogenesis, and treatment of sterility and impaired fertility. Diseases of pregnancy and parturition are also included.
660. Advanced Small Animal Surgery (5). Lec. 1, Lab. 10. Any quarter by arrangement.  
Techniques in general small animal surgery.

662. **Advanced Small Animal Orthopedic Surgery (5).** Lec. 1, Lab. 10. Any quarter by arrangement.  
New techniques in general orthopedic surgery.
663. **Advanced Small Animal Eye Surgery (5).** Lec. 1, Lab. 10. Any quarter by arrangement.  
New techniques in eye surgery.
- 664-665. **Advanced Small Animal Medicine (5-5).** Lec. 1, Lab. 10. Any quarter by arrangement.  
Causes, methods of diagnosis, treatment and control of non-surgical diseases of small animals.
666. **Advanced Canine Neurology (5).** Lec. 3, Lab. 6. Any quarter by arrangement.  
Etiology of diagnosis, treatment and control of neurological diseases of the dog.
667. **Normal Radiological Anatomy (5).** Lec. 4, Lab. 2. Any quarter by arrangement.  
Normal structure, size and position of the various organs as they appear on flat and contrast radiographs.
668. **Advanced Radiology (5).** Lec. 1, Lab. 8. Any quarter by arrangement.  
Advanced radiographic techniques including fluoroscopy, uses of contrast mediums, and the principles of image intensification and cineradiography.
669. **Radiological Interpretations (5).** Lec. 1, Lab. 8. Any quarter by arrangement.  
Pr., VM 667.  
Advanced study of radiological interpretation of pathological lesions of domestic animals.
671. **Small Animal Cardiovascular Surgery (5).** Lec. 1, Lab. 10. Any quarter by arrangement.  
Application of accepted, as well as the recently developed techniques of cardiovascular surgery.
696. **Seminar (0).** Non-credit course required of all graduate students in Veterinary Medicine.  
Meets regularly at scheduled intervals each year during Summer Quarter.
698. **Research Problems (2 to 5).** (Credit to be arranged.)
699. **Research and Thesis.** (Credit to be arranged.)

### **Zoology-Entomology (ZY)**

*Professors Arant, Baker, Dendy, Dust, Eden, Good, J. M. Lawrence, Ottis, Pearson, and Swingle*

*Research Lecturer Porter*

*Associate Professors Allison, Berger, Blake, K. Hays, Hyche, Ivey, Mecham, and Prather*

*Assistant Professors Bass, S. B. Hays, F. Lawrence, and Shell*

*Instructors Boozer, Greene, Johnson, and Shoemaker*

100. **Zoological Orientation (0).** Lec. 1. Fall.  
Historical and current concepts embodied in various disciplines of the zoological sciences.
101. **General Zoology (5).** Lec. 4, Lab. 2. All quarters.  
Principles of animal biology emphasizing metabolism, growth, reproduction, and inheritance; structure, habit, function, distribution, and economic importance of non-chordate animals.
102. **General Zoology (5).** Lec. 4, Lab. 2. Pr., ZY 101. All quarters.  
Study of the structure, habits, development, function, distribution, heredity, and economic importance of chordate animals.
204. **Insects (3).** General elective.  
Introduction to the study of life processes, occurrence, and importance of insects. (May not be taken for credit by students who have already earned credit in a more advanced course in entomology.)
205. **Wildlife Conservation (3).** Fall. General elective.  
Conservation and natural history of important wildlife animals, especially Alabama fish, amphibians, reptiles, birds and mammals. Some field trips may be required, as substitute for part of the scheduled lectures.
206. **Conservation in the United States (3).** Winter, Spring, Summer. General elective.  
Basic facts essential to an understanding of current problems pertaining to the conservation of our rapidly depleting natural resources such as soil, water, minerals, forest, and wildlife. Especially planned for elementary and high school teachers.
207. **Birds (3).** Lec. 3. Fall, Summer. General elective.  
Birds in relation to agriculture and game management, recognition of various species as to flight, color markings, songs, and feeding habits.

- 210. Fish Culture (3). Lec. 3. Winter. General elective.**  
Introduction to the construction and management of ponds, and the principles underlying fish production; also fishing methods, bait production, and the identification of the more common sport fish.
- 214. Vertebrate Physiology and Anatomy (5). Lec. 4, Lab. 3. Fall. Pr., ZY 102.**  
Function and structure of the organ systems of the vertebrate. Aimed primarily to fill the needs of students in the Schools of Agriculture and Education. Cannot be used as a prerequisite to ZY 424.
- 300. Genetics (5). Lec. 4, Lab. 3. Fall, Spring. Pr., ZY 101-2 or BY 101-2 and MH 107 or 111.**  
Designed to acquaint the student with basic genetic principles, theoretical basis for genetic systems, and modern areas of research. Laboratory work emphasizes experiments with the fly, *Drosophila*.
- 301. Comparative Anatomy (5). Lec. 3, Lab. 6. Fall, Winter, Summer. Pr., ZY 101-2.**  
Comparison of the systems of the vertebrates.
- 302. Vertebrate Embryology (5). Lec. 3, Lab. 6. Winter, Spring. Pr., ZY 101-2.**  
Consideration of the details of fertilization, cleavage, morphogenesis, and organogenesis of the amphioxus, frog, chick, pig, and human from a descriptive and analytical viewpoint. Laboratory work will consist of prepared material supplemented with available living material.
- 303. Medical Parasitology (5). Lec. 3, Lab. 6. Winter. Pr., ZY 101-2.**  
Biological study of the parasitic flatworms, roundworms, and protozoa with special emphasis on the distribution, life cycle, diagnosis, prevention, and control of forms affecting the health of man. Consideration will be given to the interrelationship between helminths of man and other animals.
- 304. General Entomology (5). Lec. 4, Lab. 3. Fall, Summer. Pr., ZY 101-2.**  
General characteristics and habits of the orders and families of the Class Insects.
- 305. Forest Entomology (5). Lec. 4, Lab. 2. Spring. Pr., ZY 101.**  
Principles of entomology in relation to insects of forests and forest products; recognition, life histories, and control of major insects of forests.
- 306. General Animal Ecology (3). Lec. 2, Lab. 3. Spring. Pr., 10 hours of general zoology or permission of instructor.**  
Introduction to physical and biotic factors of environment and how these factors affect animal life. Effects of one animal or group of animals on another animal or group.
- 308. Micrology (5). Lec. 3, Lab. 6. Fall, Winter. Pr., ZY 101-2.**  
Methods of fixation, imbedding, sectioning, staining and mounting tissues of the vertebrates and invertebrates.
- 312. Practical Fish Culture (5). As arranged.**  
Credit will be arranged for 3 months work in a state or federal hatchery or in an approved commercial hatchery or on other phases of fish culture.
- 401. Invertebrate Zoology (5). Lec. 3, Lab. 6. Winter. Pr., ZY 101-2 and junior standing.**  
Biology, taxonomy, and ecology of invertebrate animals.
- 402. Economic Entomology (5). Lec. 4, Lab. 3. Fall, Spring, Summer. Pr., junior standing.**  
Consideration of the biological aspects, life histories, and control of insects.
- 404. Medical Entomology (5). Lec. 4, Lab. 3. Spring. Pr., ZY 304 and junior standing.**  
Insects, mites, and ticks of parasitological or medical importance to man. Emphasis placed on the role of arthropods in transmission of protozoan and other diseases and prevention of these diseases by controlling their arthropod vectors.
- 405. Forest Insects (5). Lec. 4, Lab. 3. Fall. Pr., ZY 304, 305, or 402 and junior standing.**  
Principal insects of forests and forest products; their importance, taxonomy, bionomics, and control. Emphasis will be placed on life histories and habits, identification by morphological characteristics and type of damage, and control by chemical, biological, and cultural or forest-management practices.
- 406. Bee Culture (3). Lec. 2, Lab. 3. Spring. Pr., ZY 101 and junior standing.**  
Manipulation and production of bees and honey, and a consideration of bee diseases.
- 407. General Insect Morphology (5). Lec. 3, Lab. 6. Spring. Pr., ZY 304 and junior standing.**  
Comparative external anatomy and generalized internal structures of insects; characteristics used in taxonomy will be emphasized.
- 409. Histology (5). Lec. 3, Lab. 6. Spring. Pr., junior standing.**  
Origin, recognition, and functions of the fundamental and special tissues of the vertebrates.

410. **Systematic Entomology (5).** Lec. 2, Lab. 6. Winter. Pr., ZY 304 and junior standing.  
Systematic determination of insects through orders, families, genera, and species.
411. **General Parasitology (5).** Lec. 3, Lab. 6. Fall. Pr., ZY 101-2 and junior standing.  
Origin, adaptations, physiology, and ecology of parasites. Identification and life histories of representative parasitic protozoa, helminths, and arthropods with emphasis on host-parasite relationships. Techniques of examining animals for the presence of parasites and the proper preparation of such collections for study.
414. **Aquatic Insect Taxonomy (3).** Lec. 1, Lab. 6. Summer, even years. Pr., ZY 304 and junior standing.  
Collection and identification of common aquatic insects, with emphasis on the immature forms.
415. **Limnology (5).** Lec. 3, Lab. 6. Spring. Pr., CH 104, PS 205, ZY 101-2, and junior standing.  
Biological, chemical, and physical factors affecting aquatic life.
421. **Vertebrate Zoology I (5).** Lec. 3, Lab. 6. Spring. Pr., ZY 102 and junior standing.  
Taxonomy, ecology, and evolution of fishes, amphibians, and reptiles.
422. **Vertebrate Zoology II (5).** Lec. 3, Lab. 6. Fall. Pr., ZY 102 and junior standing.  
Basic taxonomy, ecology, evolution, and some biological principles of birds and mammals.
424. **Animal Physiology (5).** Lec. 4, Lab. 3. Fall, Spring. Pr., ZY 301 and junior standing.  
Systematic study of the physiology of the nervous system, special senses, circulation, respiration, digestion, kidney function, hormonal control, and reproduction. An effort is made to acquaint the student with methods of experimentation as a means for the direct acquisition of physiological facts.
426. **Principles of Game Management (5).** Lec. 4, Lab. 3. Fall. Pr., ZY 101-2 and junior standing.  
Fundamentals of game management theory, techniques, and administration.
428. **Hatchery Management (5).** Lec. 3, Lab. 4. Spring. Pr., junior standing.  
Operation of hatcheries for production of cold- and warm-water game fish and bait minnows; care of brood fish; methods of stocking, fertilizing, supplementary feeding, and controlling weeds; transportation of fish; control of parasites; and related hatchery problems.
430. **Principles of Heredity (5).** Winter, Summer. Pr., ZY 101-2 or BY 201-2 and junior standing.  
Survey in the science of genetics designed for students who will not take additional courses in genetics. Basic facts essential to understanding the mode of inheritance in plants and animals, presented in a non-technical manner. (Credit may not be allowed for both ZY 430 and ZY 300. Restricted to students in Education except by special permission.)
431. **Ecology and Taxonomy of Animals (5).** Lec. 3, Lab. 6. Summer. Pr., teaching experience and consent of instructor.  
Principles of ecology and taxonomy using field studies and museum materials. Field trips to study ecological habitats. Restricted to participants in the NSF Summer Institute of Biology. A separate section for other qualified students will be offered upon sufficient demand.
432. **Advanced Animal Biology (5).** Lec. 3, Lab. 4. Summer. Pr., teaching experience and consent of instructor.  
Principles of zoology with emphasis on morphology and physiology of the mammalian systems. Restricted to participants in the NSF Summer Institute of Biology, but will be offered in a separate section to other qualified students upon sufficient demand.
435. **Marine Biology (3).** Fall. Pr., acceptable chemistry background and junior standing.  
Introduction to the physical, chemical, and biological characteristics of the marine environment.
436. **Management of Small Impoundments (3).** Lec. 1, Lab. 6. Summer. Pr., junior standing.  
Consideration of the species of fish used in management of small impoundments, species balance, population balance analysis, methods of correcting unbalanced conditions, renovation of old impoundments, and related problems of water management.
437. **Fisheries Biology (3).** Winter. Pr., junior standing.  
An introduction to the study of vital statistics of fish populations.
438. **Wildlife Techniques (3).** Lec. 1, Lab. 6. Spring. Pr., ZY 101-2 and junior standing.  
Field and laboratory techniques employed in wildlife management and research; familiarization with wildlife literature.



**498. Special Problems (1-3). Pr., senior standing.**

A. Zoology; B. Entomology; C. Fisheries Management; D. Wildlife Management. A student can register for a total of not more than three hours credit.

**GRADUATE COURSES****601. Insect Morphology (3). Lec. 1, Lab. 6. Fall. Pr., ZY 407.**

Detailed studies of the internal structures of insects.

**602. Advanced Insect Taxonomy (5). Lec. 1, Lab. 8. Spring. Pr., ZY 410.**

Detailed study of the classification of insects. Special emphasis is placed on the classification of orders and families of insects in which the student is interested.

**603. Insect Physiology (5). Lec. 3, Lab. 6. Fall. Pr., ZY 424 and ZY 601.**

General and comparative physiology of the organ systems of insects. A minimum of two literature reviews will be made by each student during the quarter.

**604. Insect Toxicology (5). Lec. 4, Lab. 3. Winter.**

Toxic action of insecticides; analysis, preparation and use of insecticides; spray residues in relation to health; research methods in insect toxicology.

**605. Ornithology (5). Lec. 3, Lab. 6. Spring.**

Taxonomy, ecology, and life history of the birds of Southeastern United States.

**606. Mammalogy (5). Lec. 3, Lab. 6. Winter. Pr., ZY 420.**

Life history, ecology, and taxonomy of mammals, with special reference to game, fur-bearing, and predatory groups; preparation of skins and pelts for study and display.

**607. Farm Game Management (5). Lec. 3, Lab. 6. Fall. Pr., ZY 426.**

For graduate students majoring in Game Management or Fisheries Management. Application of game management theories, techniques, and administration with special emphasis on farm game species.

**608. Forest and Range Game Management (5). Lec. 3, Lab. 6. Winter. Pr., ZY 426.**

For graduate students majoring in Game Management or Fisheries Management. Application of game management theories, techniques, and administration with special reference to forest and range game.

**609. Advanced Applied Entomology (5). Lec. 4, Lab. 3. Spring. Pr., ZY 402.**

Methods of insect control including inspection, quarantines, and other legal procedures; insecticidal, biological, and cultural control; principle pests of United States; pests likely to be imported.

**610. Immature Forms of Insects (5). Lec. 2, Lab. 6. Winter. Pr., ZY 410.**

Structure and identification of immature forms of insects; methods of collecting and preserving; development and use of keys for classifying immature insects.

**611. Advanced Insect Morphology and Embryology (3). Lec. 1, Lab. 6. Spring. Pr., ZY 601.**

Insect morphology in relation to comparative embryological development of insects.

**612. Advanced Insect Toxicology (5). Lec. 4, Lab. 3. Spring. Pr., ZY 604.**

Mode of action, mode of entry, relation of chemical structure to toxicity, and precision methods of determination of insecticides; recent developments in the field of insecticide chemistry.

**614. Physiology of the Cell (3). Winter. Pr., ZY 424 and Organic Chemistry.**

Examination of the basic physiological processes at the cellular level with the tools and approaches of physical science.

**615. Advanced Fisheries Biology (3). Lec. 2, Lab. 3. Fall. Pr., ZY 437.**

Concepts of population dynamics, yield prediction equations, and the interaction of reproduction, growth, and mortality in fish populations.

**616. Systematic Ichthyology (5). Lec. 1, Lab. 8. Spring. Pr., ZY 421.**

Principles of classification and the construction and utilization of keys for the identification of fishes.

**617. Advanced Limnology (3). Lec. 1, Lab. 6. Winter. Pr., ZY 415.**

Principles and methods employed in modern limnological research.

**618. Aquaculture (2). Winter.**

Principles underlying aquatic productivity and levels of management as demonstrated by domestic and foreign lotic and lenitic cultures of fish and other aquatic crops.

**621. Management of Streams and Large Impoundments (5). Lec. 4, Lab. 3. Summer.**

Fish populations of streams and large impoundments and a consideration of methods for the management of these populations.

**622. Zoological Literature (5). Lec. 3, Lab. 6. Winter. Pr., graduate standing.**

Study of zoological literature including journals, indexes, abstracting services, and standard references. For laboratory each student is required to review, abstract, and present written and oral reports on published results of research in his major field.

623. **Organic Evolution (3).** Winter. Pr., ZY 430 or ZY 300.  
Consideration of evolutionary principles as illustrated by the various biological disciplines, particularly genetics, systematics, and paleontology.
624. **Advanced Animal Physiology (5).** Lec. 3, Lab. 6. Winter. Pr., ZY 424.  
Neuromuscular, neurocirculatory, and neurohormonal basis for animal behavior. A minimum of two literature reviews will be required of each student during the quarter.
628. **Endocrinology (5).** Lec. 3, Lab. 6. Spring. Pr., ZY 424 and Organic Chemistry.  
For qualified students in animal biology who wish to make a rigorous study of the animal hormones. Operative removal of glands and studies before and after treatment will be made in the laboratory.
630. **Advanced Genetics (5).** Lec. 3, Lab. 4. Fall, odd years. Pr., ZY 300.  
Continuation of ZY 300 emphasizing embryological effects, plasmagenes, speciation, effect of environment, biochemical genetics, and cytogenetics.
631. **Advanced Embryology (5).** Lec. 3, Lab. 4. Winter, odd years. Pr., ZY 302 and ZY 308.  
Fertilization, mechanism of cleavage, origin of asymmetry, gastrulation, organ-forming substances, cell lineage, effects of centrifugation, parthenogenesis, histogenesis, metabolism of the embryo, and effects of environment will be studied. Laboratory work will be done on chick, frog, insect, mollusk, fish, or other animal of special interest to the student.
632. **Helminthology (5).** Lec. 3, Lab. 6. Spring. Pr., ZY 411.  
Advanced studies of the morphology, physiology, life cycles, and host-parasite relationships of helminths. Opportunity for making extensive literature studies and collections of the parasites of a particular group of animals in which the student is most interested.
634. **Protozoology (5).** Lec. 3, Lab. 6. Winter, even years. Pr., ZY 411.  
Free-living and parasitic protozoa important to agriculture, wildlife, and man. Morphology, physiology, reproduction, ecology, and life histories of parasitic forms will be emphasized.
635. **Furbearer and Waterfowl Management (5).** Lec. 3, Lab. 4. Winter. Pr., ZY 426.  
For graduate students with a major or minor in wildlife management. A study of furbearer and waterfowl resources. Emphasis is placed on problems of management and utilization.
636. **Ecology of Animal Populations (3).** Fall. Pr., ZY 306.  
An investigation of the balance of nature, population cycles, natural regulation of animal numbers, competition, epizootics, and the compensatory adjustments of populations to changes in the environment.
637. **Herpetology (3).** Lec. 2, Lab. 3. Winter, odd years. Pr., ZY 421.  
A study of the morphology, taxonomy, ecology, and behavior of amphibians and reptiles. Laboratory collecting, preserving, and identification of local specimens will be an important consideration.
640. **Nematology (3).** Lec. 2, Lab. 3. Spring. Pr., ZY 632.  
Advanced study of free-living and plant- and animal-parasitic nematodes. Detailed consideration of aspects of morphology, reproduction, development, responses, physiology, and ecology.
641. **Field Entomology (3).** Lec.-Dem. 4. Fall or Spring. Pr., graduate standing.  
Identification of more important orders, families, and species of insects; a consideration of morphology, physiology, and development of insects; control of major pests. A collection of at least 100 species of economic insects will be required.
642. **Chemical Control of Insects (3).** Lec.-Dem. 4. Winter. Pr., graduate standing.  
Properties of insecticides, including toxic action in living organisms; major uses and methods of application of formulations; hazards involved in handling insecticides; spray residues in relation to marketability of crops.
643. **Heredity and Evolution (5).** Lec. 5. Summer. Pr., teaching experience and consent of instructor.  
Basic principles of genetics and contemporary evolutionary theory. Suitable laboratory methods and exercise will be demonstrated and discussed. Restricted to participants in the NSF Summer Institute of Biology, but will be offered in a separate section to other qualified students upon sufficient demand.
693. **Seminar.** (Credit to be arranged.)
698. **Special Problems (2-5).** All quarters.  
A. Zoology; B. Entomology; C. Apiculture; D. Parasitology; E. Physiology; F. Fisheries Management; G. Wildlife Management.
699. **Research and Thesis.** (Credit to be arranged.)
799. **Doctoral Research and Dissertation.** (Credit to be arranged.)

# Enrollment Statistics 1963-1964

## Table I—Enrollment by Classes, Courses, and Divisions

FALL QUARTER, 1963

DIVISION AND COURSE	Freshmen		Sophomores		Juniors		Seniors		5th Year		Graduates		Special and Unclassified		Total	
	M	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W
<b>School of Agriculture</b>																
Agricultural Sciences.....	36	2	44	2	31	1	17				91		6		225	5
Agricultural Administration.....	22	17	17		8		17								64	
Agricultural Engineering.....	17		22		5						5				49	
Biological Sciences.....	27	3	14	4	18		4				46	6	9		118	13
Forestry.....	50		30		25		19	1			7		3		134	1
Ornamental Horticulture.....	4	1	2		4	1	4								14	2
Wood Technology.....	2						2								4	
<b>TOTAL.....</b>	158	6	129	6	91	2	63	1			149	6	18		608	21
<b>School of Architecture</b>																
Architecture.....	111	6	56	5	39	1	24		29		1	1			259	12
Art.....	35	41	27	21	8		3	5							74	72
Building Construction.....	34		30		28		18								110	
Dramatic Arts.....		6		3		1		1								11
Industrial Design.....	29	1	22	1	4		7								62	2
Interior Design.....	6	25	3	8	6	5	2	4							17	42
Music.....	2	6	2	4	2	6	2						1	1	9	17
<b>TOTAL.....</b>	117	85	140	42	87	17	56	10	29		1	1	1	1	531	156
<b>School of Chemistry</b>																
Chemistry.....	25	4	16	6	21	2	8				34	5	3	1	107	18
Chemical Engineering.....	45	2	32	1	41		30				7		1	1	156	3
Laboratory Technology.....	4	28	3	16		15		8							7	68
<b>TOTAL.....</b>	74	34	51	23	62	17	38	8			41	5	4	2	270	89
<b>School of Education</b>																
Agricultural Education.....			1		28		38				27		9		103	
Agricultural Education (Saturday Students).....																
Education.....	112	399	98	344	94	310	57	232			214	317	30	48	605	1640
Industrial Arts Education.....																
Home Economics Education.....																
Psychology.....	23	40	17	12	23	8	7	5			11	8	1		82	73
<b>TOTAL.....</b>	135	439	116	356	145	318	102	227			252	325	40	48	790	1713

## DIVISION AND COURSE

## School of Engineering

	Freshmen		Sophomores		Juniors		Seniors		5th Year		Graduates		Special and Unclassified		Total	
	M	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W
Aeronautical Administration.....	1		46	1	39		7						14	2	93	1
Aerospace Engineering.....			50		35		11				8				118	2
Civil Engineering.....			37		50		34				10				131	
Electrical Engineering.....			98		130		107				41		2		378	
Engineering Physics.....			1		7		2								10	
Industrial Management.....			101		109		52				33		1		263	
Mechanical Engineering.....			76		60		53		1				1		223	2
Pre-Engineering.....													1		1015	6
Pre-Engineering Management.....	1014	6													113	
Textile Management.....	112														26	
Textile Sciences.....															8	
TOTAL.....	1127	6	423	4	447	1	269	1			92		20	2	2378	14

## School of Home Economics

Home Economics.....	98		84		1	57		20			18		2		1	279
Nursing Science.....	2															2
TOTAL.....	100		84		1	57		20			18		2		1	281

## School of Pharmacy

Pharmacy.....	61	10	58	8	55	5	47	6	5		3	1	2		231	30
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## School of Science &amp; Literature

Business Administration.....	285	31	285	15	236	7	153	5			17	3	4		980	61
Pre-Dentistry.....	34		30		6		1	6	1				1		71	
Pre-Law.....	64	6	30	1	16	1									116	9
Pre-Medicine.....	56	12	50	10	19	1	4						4		133	23
Pre-Veterinary Medicine.....	69	5	35	5	5	1									109	11
Applied Physics.....	14	1	14		6		2								36	1
Physics.....	15	3	9	1	6	1	13				18				64	5
Mathematics.....	24	26	22	9	19	5	9	1			48	6	1		122	48
Nuclear Science.....																
Science & Literature.....	100	121	88	65	22	30	58	30			35	41	8		311	287
Secretarial Administration.....	46		21		15		7									89
TOTAL.....	661	251	563	127	338	61	245	44			119	50	17	1	1943	534

## School of Veterinary Medicine

Veterinary Medicine.....			73	1	56	5	50	1	51	3	14				244	10
GRAND TOTAL.....	2433	931	1553	651	1282	483	870	318	85	3	671	406	102	56	6996	2848

Table II—Enrollment by Classes, Courses and Divisions

SUMMER, FALL, AND WINTER 1963-64 (as of March 1, 1964)

DIVISION AND COURSE	Freshmen			Sophomores			Juniors			Seniors			5th Year			Graduates			Special and Unclassified			Total	
	M	W	T	M	W	T	M	W	T	M	W	T	M	W	T	M	W	T	M	W	T	M	W
<b>School of Agriculture</b>																							
Agricultural Sciences.....	42	2	51	3	35	1	21			21			111	1	13				273			7	
Agricultural Administration.....	26		22		8		21			21									77				
Agricultural Engineering.....	22		23		5		2			2			8		1				61				
Biological Sciences.....	32	3	18	5	20		4	1		4			54	7	18				146			16	
Forestry.....	57		36		25		23			23			7		4				152			2	
Ornamental Horticulture.....	4	1	3		4		1			3									19				
Wood Technology.....	2									3									5				
TOTAL.....	185	6	153	8	97	2	79	1					180	8	36				730			25	
<b>School of Architecture</b>																							
Architecture.....	113	6	57	5	43	1	24			24			2	1	1				267			12	
Art.....	42	46	33	26	8	4	6			6									92			86	
Building Construction.....	41		37		32	1	31			31									142				
Dramatic Arts.....	1	8	1	3									2						2			14	
Industrial Design.....	39	1	22	1	4	8	8			8									73			2	
Interior Design.....	7	26	4	8	6	6	2			2									21			44	
Music.....	3	7	2	4	2	6	2			2			1						11			20	
TOTAL.....	246	94	156	47	97	18	73	15					2	1	4				608			178	
<b>School of Chemistry</b>																							
Chemistry.....	25	4	20	6	22	2	9			9			34	5	3				113			18	
Chemical Engineering.....	53	2	40	1	48		38			38			10		1				190			3	
Laboratory Technology.....	4	30	3	18	16		1	8		1									8			73	
TOTAL.....	82	36	63	25	70	18	48	8					44	5	4				311			94	
<b>School of Education</b>																							
Agricultural Education.....					30		45						54		18				117				
Agricultural Education (Saturday Students).....													442	564	74	111			951			2139	
Education.....	131	442	114	382	106	351	84	289															
Industrial Arts Education.....																							
Home Economics Education.....																							
Psychology.....	30	40	19	14	27	8	13	7					14	11	1				2			104	82
TOTAL.....	161	482	133	396	163	359	142	296					510	575	93	113			1202			2221	

## DIVISION AND COURSE

	Freshmen		Sophomores		Juniors		Seniors		5th Year		Graduates		Special and Unclassified		Total	
	M	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W
<b>School of Engineering</b>																
Aeronautical Administration.....			55	1	40		10						1		106	1
Aerospace Engineering.....	1		55		37		18						17		134	2
Civil Engineering.....			44		58		49						2		166	
Electrical Engineering.....			117		146		139	1					2		448	1
Engineering Physics.....			1		8		3								12	
Industrial Management.....			116		114		79						3		312	2
Mechanical Engineering.....			92	1	75		70	1					1		274	6
Pre-Engineering.....	1189	6											1		190	
Pre-Engineering Management.....	142		12	1	14	1	6						1		143	2
Textile Management.....			4	1	4		1								32	2
Textile Sciences.....															9	1
TOTAL.....	1332	6	496	4	496	1	373	2			102	27	2	2826	15	
<b>School of Home Economics</b>																
Home Economics.....	1	105		90	1	58		28				44		8	2	333
Nursing Science.....		2		1											3	
TOTAL.....	1	107		91	1	58		28			44		8	2	336	
<b>School of Pharmacy</b>																
Pharmacy.....	76	12	73	9	64	7	63	6	1	5	1	6			293	36
<b>School of Science &amp; Literature</b>																
Business Administration.....	369	34	341	17	252	11	205	7			70	67	4		1241	136
Pre-Dentistry.....	37		37		6		1						2		83	
Pre-Law.....	71	6	32	2	17	1	8	1					5		128	10
Pre-Medicine.....	62	12	54	12	21	1	8						5		150	25
Pre-Veterinary Medicine.....	77	5	41	5	16	1							1		125	11
Physics.....	31	4	26	1	16	1	16				19	7	1	1	108	6
Mathematics.....	28	26	27	11	21	6	9	2			54	7	17	6	140	53
Science & Literature.....	121	136	101	72	24	30	73	43			17	2			336	287
Science Institute.....															17	2
Secretarial Administration.....		54		25		15		7								101
TOTAL.....	796	277	659	145	363	66	320	60			160	76	30	7	2328	631
<b>School of Veterinary Medicine</b>																
Veterinary Medicine.....			73	1	56	5	50	1	51	3	16				246	10
GRAND TOTAL.....	2879	1020	1806	1726	1407	534	1148	417	87	4	1019	710	200	135	8546	3546



Table III—Enrollment of Alabama Students by Counties

SUMMER, FALL AND WINTER 1963-64 (as of March 1, 1964)

County	Men	Women	Total	Veterans
Autauga	41	19	60	2
Baldwin	109	52	161	
Barbour	57	20	77	1
Bibb	19	4	23	
Blount	40	14	54	
Bullock	16	21	37	
Butler	70	33	103	
Calhoun	136	48	184	
Chambers	162	90	252	4
Cherokee	19	5	24	
Chilton	36	17	53	
Choctaw	20	33	53	
Clarke	38	9	47	
Clay	46	6	52	1
Cleburne	16	7	23	
Coffee	72	26	98	
Colbert	72	20	92	1
Conecuh	29	22	51	
Coosa	31	11	42	
Covington	100	33	133	1
Crenshaw	25	13	38	1
Cullman	60	40	100	
Dale	78	36	114	
Dallas	105	28	133	2
DeKalb	54	28	82	
Elmore	114	48	162	2
Escambia	56	20	76	
Etowah	139	44	183	
Fayette	20	3	23	
Franklin	25	9	34	1
Geneva	61	30	91	
Greene	6	3	9	
Hale	15	2	17	
Henry	31	18	49	
Houston	111	61	172	
Jackson	55	12	67	1
Jefferson	1141	549	1690	8
Lamar	18	4	22	
Lauderdale	46	16	62	
Lawrence	24	9	33	
Lee	624	310	934	23
Limestone	31	10	41	
Lowndes	23	12	35	
Macon	42	35	77	1
Madison	202	80	282	1
Marengo	21	5	26	1
Marion	16	8	24	1
Marshall	96	18	114	2
Mobile	508	149	657	
Monroe	29	9	38	
Montgomery	484	272	756	5
Morgan	98	20	118	1
Perry	15	6	21	
Pickens	18	4	22	
Pike	48	24	72	
Randolph	75	43	118	
Russell	96	36	132	2
St. Clair	26	17	43	
Shelby	38	14	52	1
Sumter	7	5	12	
Talladega	152	61	213	1
Tallapoosa	152	77	229	4
Tuscaloosa	20	4	24	1
Walker	28	7	35	
Washington	20	6	26	
Wilcox	29	10	39	
Winston	16	4	20	
TOTAL (ALABAMA)	6227	2709	8936	69

Table IV—Enrollment of Students by States and Territories

SUMMER, FALL AND WINTER 1963-64 (as of March 1, 1964)

State	Men	Women	Total	Veterans
Alabama.....	6227	2709	8936	69
Arizona.....		1	1	
Arkansas.....	23	13	36	
California.....	7	5	12	
Colorado.....	5	1	6	
Connecticut.....	1	1	2	
Delaware.....	1	1	2	
District of Columbia.....	1	1	2	
Florida.....	425	100	525	7
Georgia.....	793	394	1187	5
Muscowee County, Ga.....	175	152	327	9
Idaho.....	1		1	
Illinois.....	11	4	15	
Indiana.....	6	1	7	
Iowa.....	4	1	5	
Kansas.....		2	2	
Kentucky.....	73	6	79	
Louisiana.....	42	19	61	
Maine.....	7		7	
Maryland.....	11	3	14	
Massachusetts.....	8		8	
Michigan.....	8		8	
Minnesota.....	1		1	
Mississippi.....	121	24	145	3
Missouri.....	5	1	6	
Nebraska.....	3		3	
Nevada.....	1		1	
New Jersey.....	18	5	23	
New Mexico.....	1		1	
New York.....	21	5	26	
North Carolina.....	42	6	48	1
North Dakota.....	1		1	
Ohio.....	11	2	13	
Oklahoma.....	7		7	
Oregon.....	1	1	2	
Pennsylvania.....	27	2	29	1
Rhode Island.....	2		2	
South Carolina.....	49	13	62	1
South Dakota.....		2	2	
Tennessee.....	238	45	283	1
Texas.....	19	2	21	1
Utah.....	1		1	
Virginia.....	36	8	44	
Washington.....	2	1	3	
West Virginia.....	5		5	
Wisconsin.....	4	2	6	
TOTALS—Other States.....	2218	824	3042	29
TOTALS—All States.....	8445	3533	11978	98
U.S. Territories	Men	Women	Total	Veterans
Canal Zone.....	2		2	
Puerto Rico.....	2	2	4	
TOTALS.....	4	2	6	

**Table V—Enrollment of Students by Foreign Countries**

SUMMER, FALL AND WINTER 1963-64 (as of March 1, 1964)

Foreign Countries	Men	Women	Total	Veterans
Bolivia.....	1		1	
Borneo.....	1		1	
Canada.....		1	1	1
China.....	13	1	14	
Colombia.....	5		5	
Cuba.....	5	1	6	
Ecuador.....	1		1	
Egypt.....	2	1	3	
El Salvador.....	1		1	
Formosa.....	2	1	3	
Germany.....	4	1	5	
Greece.....	6	1	7	
Guatemala.....	3		3	
Honduras.....	2	1	3	
India.....	11		11	
Indonesia.....	4		4	
Iran.....	3		3	
Iraq.....	2		2	
Japan.....	1	1	2	
Jordan.....	3		3	
Korea.....	4		4	
Mexico.....	1		1	
Morocco.....	1		1	
Netherlands.....	1		1	
Nicaragua.....	1		1	
Pakistan.....	2		2	
Peru.....	1		1	
Philippine Islands.....	2		2	
Republic of Viet Nam.....	1	1	2	
So. Rhodesia.....	1		1	
Switzerland.....		1	1	
Syria.....	1		1	
Thailand.....	5		5	
Turkey.....	3		3	
Venezuela.....	3		3	
TOTALS—Foreign Countries.....	97	11	108	1
TOTALS—All Students.....	8546	3546	12092	99

## General Summary of Enrollment 1963-64

SUMMER, FALL AND WINTER 1963-64 (as of March 1, 1964)

	Men	Women	Total
Regular Session (Summer, Fall, and Winter).....	8,546	3,546	12,092
Fall Quarter 1963.....	6,996	2,848	9,844
Correspondence Study Courses.....	338	271	609
Short Courses and Conferences:			
Alabama Credit Union Conference.....	55	40	95
Alabama Bankers Conference.....	76	5	81
Auburn Forestry Forum.....	80	0	80
Beef Cattle Short Courses.....	170	0	170
Cotton Scouting School.....	70	0	70
Cotton Short Course.....	50	0	50
4-H Club Conference.....	356	372	728
Future Farmers of Alabama.....	900	0	900
Garden Club, Alabama State Convention.....	0	280	280
Milk Sanitarians and Milk Plant Fieldmen's Conference.....	100	0	100
Nurserymen and Landscape Gardeners' Conference.....	119	12	131
Officers Meeting County Agents Association.....	8	0	8
Soil Fertility Conference.....	150	0	150
Southern Pasture Conference.....	147	0	147
Swine Evaluation Conference.....	200	0	200
Turf Grass Short Course.....	89	4	93
Vocational Agriculture Teachers Conference.....	300	0	300
Vocational Agriculture Teachers Workshop.....	37	0	37
Alabama P.T.A. Conference.....	60	122	182
Arithmetic Conference.....	41	87	128
Health and Physical Education Conference.....	95	80	175
International Paper Company Foundation			
Administrators' Conference.....	0	0	75
International Paper Company Foundation Program.....	0	0	70
Learning Resources Conference.....	0	0	178
Music Conference.....	0	0	300
Reading Conference.....	25	105	130
School Administrators' Conference.....	450	83	533
Vocational Landscaping Workshop.....	30	0	30
Advanced Dynamics Conference.....	32	0	32
Advanced Thermodynamics Conference.....	23	0	23
Alabama Highway Conference.....	170	0	170
Alabama Plumbing and Gas Inspectors Short Course.....	50	0	50
Carding Analysis Conference.....	55	0	55
Carding and Spinning Conference.....	300	0	300
Closed-Loop Control Clinic.....	24	0	24
Engineering Conference for High School Students.....	120	0	120
Physical Testing Clinic.....	50	0	50
Slashing and Weaving Conference.....	150	0	150
Spinning Process Analysis Conference.....	70	0	70
Textile Slashing Short Course.....	122	0	122
Alabama Pharmaceutical Seminar.....	116	14	130
Drug Merchandizing Conference.....	38	7	45
Pre-Pharmacy Advisory Group.....	37	3	40
Annual Veterinary Conference.....	259	48	307
Veterinary Conference for Post-Graduates.....	28	0	28
GRAND TOTAL.....			19,838

\* Figures showing division to men and women not available.

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